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ABSTRACT

The concepts and methodologies outlined in "A Policy Information System for Vocational Education" are presented in a simple computer format in this booklet. It also contains a sample output representing 5-year projections of various planning needs for vocational education. Computerized figures in the eight areas corresponding to those in the Policy Information System (total district enrollment, student interest, labor market demand, program enrollment, instructional staff needs, instructional staff costs, capital outlay, and consumable costs) are shown, and diverse elements of vocational education requiring further postgraduate research are presented in skeletal form. Various methods for making projections are presented and explained in detail in the sample outputs. (BL)

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POLICY INFORMATION SYSTEM COMPUTER PROGRAM

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CE 012 426

POLICY INFORMATION SYSTEM

COMPUTER PROGRAM

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POLICY INFORMATION SYSTEM

COMPUTER PROGRAM

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ACKNOWLEDGMENT

The computer program contained herein begins with a computerization of the contents of the Policy Information System. It then presents additions which expand the capacities of the planning analysis in several areas.

The preparation of this report and the Policy Information System was a team effort of the staff of the Long-Range Vocational Education Planning Project of the Middle Cities Education Association. Ideas and information were gleaned from numerous sources by everyone involved and then synthesized at regular staff meetings before finally being assimilated by those principally responsible for the completion of particular sections of the Policy Information System and accompanying soft ware. The various authors and their more specific responsibilities in the preparation of this publication are described below.

Scott Ramsey, a graduate research assistant on the project staff is a graduate student in planning with academic background in mathematics and urban geography. Mr. Ramsey completed most of the detail work in the creation of the computer program and programming explanation contained here.

Paul Stuhmer, the project's principal systems analyist has academic background in planning and economics and professional experience in systems analysis. Mr. Stuhmer was responsible for much of the conceptual background for the creation of this computer program.

Roger E. Hamlin, Ph.D., is currently Program Chairman of the Urban Planning Division of the School of Urban Planning & Landscape

Architecture and Director of the Education-Employment Policy project of the State of Michigan. He worked previously for the New York Senate, a ministry of housing in South America, The New York State Office of Planning Services and the Continuing Education Division of Syracuse University. C. Robert Muth, Ph.D., Assistant to the Dean of the College of Education of Michigan State University is also Executive Director of the Middle Cities Education Association and Secretary of the Michigan School Business Officials. Past positions include extensive senior administrative experience in the Grand Rapids School System. He also spent several years on the Grand Rapids Planning Board. Drs. Hamlin and Muth acted as Director and Executive Director respectively in the creation of this computer program as a part of the Long-Range Vocational Education Planning Project.

Other members of the project team which played important roles in the formulation of all aspects of the project include the following. Paul J. Kriz, Ph.D. and Albert Lynd, Ph.D. played important research roles in the areas of finance and personnel respectively. John R. Martin and Clifford Jump. Ph.D. and Milton Miller acted as field interns to the project and tested the computer systems in three cities. David Unnewehr, a graduate research assistant with academic and professional experience in planning and journalism contributed to the editing of nearly all project products. Stephany Tortatzky, a graduate research assistant with background in education and organizational communications, concentrated on the community input to vocational planning. Judy K. Pfaff, research assistant with educational

background in systems science, mathematics and educational psychology, was a computer programming specialist for the project. Thomas E. Johnston, a research assistant interested in labor relations, economics and social science and supervisory experience in industry, focused on the concern of the unemployed and underemployed. Jeffrey Crause, a graduate student in the School of Urban Planning studied the geographic determinants of labor markets. Richard Featherstone, Ph.D. was a faculty consultant to the project with extensive experience in management information systems.

An important component of the success of all aspects of the project was the competent management of clerical work, bookkeeping and office administration by Mary Guile.

INTRODUCTION

This program booklet contains the sample output of a number of simple computer exercises designed to project various planning needs in the field of vocational education. The computer program, however, represents only one of a number of interrelated products recently published by a project team from Michigan State University. These other related materials include:

(1) The Policy Information System. This model is not only designed to familiarize the user with the planning process but also to provide a system for translating this knowledge into quantitative estimates. The report is divided into several sections, each assessing a specific future need or interest in vocational education. This computer program and its sample output are simply translations of the Policy Information System's methodologies into a computer format.

(2) Planning for Vocational Education. Consisting of a number of monographs addressing specific areas of vocational education planning, these monographs introduce the concept of long-range vocational education planning and suggest methods for its implementation. Alternative methods of working with each component of the planning model are explored, as are existing and theoretical administrative and organization planning structures. Also discussed are trends and futures in vocational education. From the monographs come many of the original ideas

and concepts ultimately incorporated in both the Policy Information System and this computer program.

(3) Proposed Doctoral Degree with Emphasis in Education Planning. This report presents investigations and recommendations for developing a doctoral degree designed to train professionals in the area of educational planning. Three models are offered in this suggested degree program based on professional competency, more traditional approaches, or combinations of the two. This computer program presents in skeletal form some of the diverse elements of vocational education requiring further postgraduate research.

(4) Report of the Implementation of Long-Range Planning for Vocational Education. A description of the test application of the long-range planning model and management information system developed in this project, this report details the implementation process, compares differences between sites in organization structure and test procedures, and offers conclusions about the implementation process and the model in general which can be applied to the use of the model in other test sites. The computer program employs much of the data base developed and tested in the implementation report and benefits from the report's identification of analytical problems in vocational education planning.

(5) Vocational Education: An Annotated Bibliography. Organized in this booklet are information sources related to vocational education and long-range planning. The bibliography contains sources from the literature on vocational education, urban planning, man-power planning

and education.

(6) Data Element Dictionary for Vocational Education. This document provides a foundation for the Management Information System from which efforts can be systematically incorporated into present program activities. The dictionary offers the planner all the structural aspects of program design which must be dealt with for successful program implementation. Both the computer program the the Data Element Dictionary represent systematic, efficient ways of organizing, assessing, and computing relevant vocational education information.

The preceding reports all aim at giving the educator, administrator, and the planner a comprehensive, referenced overview of the vocational education planning process.

The computer program itself provides the user with projections in specific areas of vocational education. Two overriding concerns guide the program's design and execution - simplicity and flexibility. The program contains basically uncomplicated assumptions, explanations, definitions, and computations that are thoroughly detailed in the sample output and in the Policy Information System. The program's flexibility allows its user to choose one method of projections over another, or to weigh one projection method more heavily than another. In fact, some methods rely on an administrator's professional judgment as actual input in computing projections.

COMPUTER PROGRAM DESCRITTION

The computer program is divided into eight areas called Tabs. Tab One constitutes the main program and projects school district enrollments over the next five years. Four different methods are used in Tab One, and each method is explained in detail in the sample output.

Tab Two is divided into three methods. Enrollments in vocational education programs are projected on the basis of student interest surveys, projected eleventh and twelfth grade enrollments, and a combination of these two.

Tab Three estimates job placements by vocational education programs based on past job placements, past job demand, and projected job demand. Tab Three thus recognizes the importance of the labor market as an important factor in regulating program enrollments.

Tab Four allows use of the previous tabs to create a single projection for the enrollment of each program or course of study. This tab gives the administrator the opportunity to weigh the use of labor market or student interest/future enrollment projections according to the district's preference.

Tab Five also uses the results of previous tabs, together with present average class sizes and teacher requirements to predice future required teaching personnel.

Tab Six, employing the teaching personnel requirements from Tab Five, current estimates of salaries and fringe benefits, and an anticipated rate of inflation, projects instructional staff costs by program.

Tab Seven projects capital costs by program based on the present estimates of capital costs for those programs plus consideration of a fixed inflation factor.

Finally, Tab Eight, like Tab Seven, projects the cost of consumables for each program based on the present cost for that or an equivalent program. A cost inflation factor based on cost increases of previous years is then applied to the current figure to obtain an estimate of future costs.

For further clarification or explanation of definitions, computations, data requirements, or assumptions, the reader should consult both the Policy Information System and the Sample Program Output contained on the following pages.

THE PROGRAM

```
*DECK PROJECT
      PROGRAM PROJ(INPUT,OUTPUT,TAPE1=INPUT,TAPE3=OUTPUT)
C
C         THIS COMPUTER PROGRAM IS DESIGNED TO ASSIST THE ADMINISTRATOR
C         IN PLANNING FOR VOCATIONAL EDUCATON NEEDS. THIS EXERCISE CON-
C         SISTS OF ONE MAIN PROGRAM AND TEN SUBPROGRAMS, EACH PROVIDING
C         PROJECTIONS IN SPECIFIC AREAS OF VOCATIONAL EDUCATION.
C
C
C
C         SOME COMMENTS ABOUT TAB ONE----------
C
C   THIS PROGRAM COMPUTES 5 YEARS OF PROJECTED ENROLLMENTS BASED ON THE PAST 11
C   YEARS (CURRENT YEAR INCLUDED) OF BIRTHS AND THE PAST 6 YEARS (C.Y.I.) OF
C   ENROLLMENT DATA.
C
C     ORIGINAL PROGRAM USING PROJECTION METHOD 1  WRITTEN BY --
C          WAYNE SCOTT  EMPLOYEE OF GRAND RAPIDS SCHOOLS
C     PROGRAM MODIFIED 1976 BY JUDY PFAFF AND DON HANNA  MIDDLE CITY SCHOOLS
C          MICHIGAN STATE UNIVERSITY
C
C          INPUT DATA MUST BE FORMATTED AS FOLLOWS
C            CARD 1 CURRENT DATE IN COLUMNS 2-9
C            NJOBS                          15-16 NUMBER OF SCHOOL DISTRICTS
C                                                 BEING PROJECTED --
C                                                 IF BLANK  WILL SET TO ONE
C       CARDS 2- 92 WILL BE REPEATED FOR EACH SCHOOL DISTRICT
C            CARD 2 ID   COLUMNS 1-20 SCHOOL DISTRICT NAME -- TRY TO CENTER
C            CARD 3 ISUM COLS    1-2  SUMMARY TABLE 1 BEGINNING  AS WANT RESULTS
C                                3-4                1 END
C                                5-6                2 BEGINNING
C                                7-8                2 END
C                                9-10               3 BEGINNING
C                               11-12               3 END
C                               13-14               4 BEGINNING
C                               15-16               4 END
C            CARD 4 FIRST YEAR OF TABLE  LAST YEAR OF ACTUAL DATA ENTERED - 5
C                   COLS 2 - 3   (FALL DATE - 5)
C   OTHER    CARDS 5- 10  BIRTHS                  YEARS 1-5
C   OTHER    CARDS11- 15  BIRTHS                  YEARS BACK 5 YEARS FROM ABOVE
C   OTHER    CARDS16- 21  KINDERGARTEN ENROLLMENT YEARS  1-5
C   OTHER    CARDS22- 27  GRADE 1      ENROLLMENT YEARS  1-5
C   OTHER    CARDS .
C   OTHER    CARDS .
C   OTHER    CARDS .
C   OTHER    CARDS86- 91  GRADE 12     ENROLLMENT  YEARS 1-5
C
C      OTHER          DESCRIBED BELOW
C          CC         PUNCH  IF FREQUENCY OF
C        2-3            1            COUNTY BIRTHS
C                       2            KINDERGARTEN
C                       3            1
C                       4            2
C                       5            3
C                       6            4
C                       7            5
C                       8            6
C                       9            7
C                      10            8
C                      11            9
C                      12            10
C                      13            11
C                      14            12
C            10-11     THE YEAR OF FALL SEMESTER
C            14-18     ENROLLMENT
C       NICE TO PUT AN IDENTIFIER IN SOME OTHER COLUMNS
C              92  A 7-8-9 END-OF-FILE  IN COLUMN 1  -- LAST DATA CARD IS SET
C
C
C            ALL NECESSARY DATA MUST BE INCLUDED TO AVOID AN ERROR MESSAGE
C
C
C            PROGRAMMERS NOTE   THE DATA FROM WHICH THE PROJECTIONS ARE MADE
C            ARE STORED IN ARRAYS SIMILAR TO THE OUTPUT ARRAY EXCEPT
C            A 6TH COLUMN IS ADDED FOR STORAGE. (PROJ1)
C          FREQ(AGE-GRADE,YEARS,A)   A=1  IS ACTUAL NUMBERS
C                                    A=2  IS PERCENTAGES USED
C            PROJ1(AGE-GRADE,YEARS OF PROJECTIONS,A)    5 YEAR AVERAGE
C            PROJ2(AGE-GRADE,YEARS OF PROJECTIONS,A)    LAST YEAR
C            PROJ4(AGE-GRADE,YEARS OF PROJECTIONS,A)    LINEAR REGRESSION PROJECTION
```

```
C          PROJ3(AGE-GRADE,YEARS OF PROJECTIONS,A)   AVERAGES OTHER PROJ1-2,4
C
C          SET UP STORAGE AREAS FOR INPUT DATA.
      COMMON /ALL/ NAME1(50),NAME2(50),          FMM(50,5),XX(50,5),
     +COMB(50,5),Q(50,5),SM(50,5),RR(50,5),TSA(50),TADJ(50,5),TS(50),
     +TPSC(50,5),PCOUT(50,5),TPC(50,5),TOT(50,5)
      COMMON/TWO/ FPS1(50),FPS2(50),FPS3(50),FPE1(50),FPE2(50),FPE3(50),
     +FCSI(50)
      COMMON/CMB/ FWT1(50),FWT2(50)
      COMMON/TH3/ PLC1(50),PLC2(50),PLC3(50),DEM1(50),DEM2(50),DEM3(50),
     +PDM(50,5)
      COMMON/FOR/ DSRP(50),DSIR(50)
      COMMON/FVE/ FER(50)
      COMMON/SIX/ SC(50),FIF(50),NSC(50)
      COMMON/SVN/ POUT(50),GIF(50)
      COMMON/EGHT/ TCC(50),HIF(50)
      COMMON/X/FREQ(18,6,2),IYRS(11,2),                PROJ1(18,6,2)
      COMMON     PROJ2(18,6,2),PROJ3(18,6,2),ID(2),ISUM(4,2),IS(4,2),D(2)
      COMMON PROJ4(18,6,2)
      DIMENSION JS(13)
      DATA (JS(I),I=1,13)/2H K,2H 1,2H 2,2H 3,2H 4,2H 5,2H 6,2H 7,2H 8,
     1 2H 9,2H10,2H11,2H12/
C          THE MAIN PROGRAM, TAB 1, PROCEEDS TO PROJECT SCHOOL ENROLLMENTS.
      WRITE 755
  755 FORMAT(60X,*TAB ONE*///)
      WRITE 756
  756 FORMAT(15X,12HINTRODUCTION,10X,*TAB ONE IS CALLED THE COHORT SURVI
     +VAL METHOD. IT IS DESIGNED*/35X,*TO ESTIMATE STUDENT ENROLLMENT, G
     +RADES K THROUGH 12, OVER THE*/35X,*NEXT FIVE YEARS. THE COHORT SUR
     +VIVAL METHOD INVOLVES CALCULATING*/35X,*THE RATE AT WHICH THE NUMBER
     +ER OF STUDENTS CHANGES AS THAT*/35X,*AGE GROUP MOVES THROUGH THE G
     +RADES. THE PROJECTED ENROLLMENTS */35X,*OF 11TH AND 12TH GRADES, O
     +R THOSE STUDENTS AVAILABLE FOR*/35X,*VOCATIONAL EDUCATION PROGRAMS
     +, IN METHOD ONE ARE USED IN TAB*/35X,*TWO*/
     +                    15X,11HDEFINITIONS,9X,*1. SURVIVAL RATE-THE
     + PERCENTAGE OF STUDENTS MOVING FROM ONE GRADE*/35X, *TO THE NEXT E
     +ACH YEAR.*/35X,*2. AVERAGE SURVIVAL RATIO-THE AVERAGE OF SURVIVAL
     +RATES FOR EACH*/35X,*GRADE ACROSS A NUMBER OF YEARS. THIS IS USED
     +TO ESTIMATE FUTURE*/35X,*SURVIVAL FROM ONE GRADE TO THE NEXT.*//)
      READ(1,602)D,NJOBS
  602 FORMAT(T2,2A4,5X,I2)
      IF(NJOBS.LE.0)NJOBS=1
      DO 5000 ITIMES=1,NJOBS
C     ISUM(4,2) CONTAIN INFORMATION TO MAKE SUMMARY TABLES
C     WANT 1-5   PUNCH   1 5 GET 3-7 WANT   K-5   PUNCH   K 6   GET   2-8
C          6-8           6 8      8-10        7-9          7 9         9-11
C          9-12          912     11-14       10-12        1012        12-14
C          TOT           K12      2-14        TOT          K12         2-14
      READ(1,605)ID,((ISUM(J,K),K=1,2),J=1,4)
  605 FORMAT(2A10/8A2)
      DO 30 I=1,4
      DO 37 K=1,2
      DO 35 J=1,13
      IF(ISUM(I,K).NE.JS(J))GO TO 35
      IS(I,K)= J + 1
   35 CONTINUE
   37 CONTINUE
      IF(IS(I,2).GT.IS(I,1).AND.IS(I,2).LE.14)GO TO 30
      PRINT 39,ISUM(I,1),ISUM(I,2),I
   39 FORMAT(1H1,* SOMETHING WRONG WITH SUMMARY TABLE REQUEST, BEG IS *,
     1I3,* END IS *, I3, * FOR TABLE  *,I3)
      STOP
   30 CONTINUE
      NO=0
      L=0
C     ZERO OUT CELLS OF FREQ AND FILL CELLS IN COLUMNS 1-6
      DO5I=1,18
      DO 5 J=1,6
      PROJ1(I,J,1)=PROJ1(I,J,2)= 0.0
      PROJ3(I,J,1)=PROJ2(I,J,1)=0.0
      PROJ3(I,J,2)=PROJ2(I,J,2)=0.0
      PROJ4(I,J,1)=PROJ4(I,J,2)=0.0
      FREQ(I,J,1)=0.0
5     FREQ(I,J,2)=0.0
      READ(1,1) IYRS(1,1)
1     FORMAT(T2,I2)
      DO2 I=1,10
      L=I+1
      IYRS(L,1)=IYRS(I,1)+1
2     IYRS(L,2)=IYRS(L,1)+1
      IYRS(1,2)=IYRS(1,1)+1
```

```
3       READ(1,4)NAGE,IY,F,IT
4       FORMAT(T2,I2,T10,I2,T14,F5.0,T80,I1)
        IF(EOF(1))99,100
  100 NO=NO + 1
        IF(NAGE.EQ.1)GO TO 110
        IF(IY.GE.IYRS(1,1))GO TO 110
        PRINT 105,IY,NO
  105 FORMAT(1H0,*ERROR DATA FROM YEAR *,I3,* FOUND ON DATA CARD *,I3)
        STOP
  110 DO6I=1,6
        M=IYRS(I,1)
        IF(IY.EQ.M) GO TO 7
        MI=IYRS(I,1)-5
        JI=I+6
        IF(IY.EQ.MI) GO TO 9
        IF(I.EQ.6) GO TO 8
        GO TO 6
    9   PROJ1(1,I,1)=F
        GO TO 3
8       WRITE(3,120)NO
120     FORMAT(≠1≠,≠ERROR ON DATA CARD≠,I6)
        STOP
7       FREQ(NAGE,I,1)=F
        GO TO 3
6       CONTINUE
        GO TO 3
C       FILL CELLS IN COLUMNS 7-12
99      CONTINUE
        PROJ1(1,6,1)=FREQ(1,1,1)
C   CHECK FOR ZEROES IN ACTUAL ENROLLMENT DATA
        DO701I=1,14
        DO701J=1,6
        IF(FREQ(I,J,1).EQ.0.0) GO TO 201
701     CONTINUE
C   CHECK FOR ZEROES IN BIRTHS PRIOR TO BEGINNING YEAR OF ENROLLMENT DATA
        DO 705 I=2,5
        IF(PROJ1(1,I,1).EQ.0.0)GO TO 706
        GO TO 705
  706 IYE= IYRS(1,1)+ 12 -(I+6) + 1900
        WRITE(3,707)IYE
707     FORMAT(≠1≠,≠THE NUMBER OF BIRTHS IN YEAR≠,I7,2X,≠HAS NOT BEEN INCL
       1UDED.≠)
        GO TO 204
705     CONTINUE
C   PRINT COUNTY BIRTHS
        WRITE(3,11)ID,D
    11 FORMAT(1HT,29X,2A10,2A4//1H0,34X,*BIRTHS FOR THE COUNTY*//1H ,39X,
      1 *YEAR   BIRTHS*//)
        DO 12 I=1,5
          J=IYRS(1,1) - (6-I) +1900
        WRITE(3,13) J,PROJ1(1,I,1)
    13 FORMAT(1H ,39X,I4,2X,F6.0)
    12 CONTINUE
        DO 14 I=1,6
        J= IYRS(1,1)+I+1900 - 1
        WRITE(3,13)J,FREQ(1,I,1)
    14 CONTINUE
C   FIND THE PERCENTAGES I=3,14    J=2,6
C                                          ACTUAL PERCENTAGES GRADES 1-12
        DO800I=3,14
        DO800J=2,6
        IA=I-1
        IB=J-1
800     FREQ(I,J,2)=FREQ(I,J,1)*100.0/FREQ(IA,IB,1)
C   PERCENTAGES I=2    J=2,6
C                                          ACTUAL PERCENTAGES KINDERGARTEN
        DO801J=2,6
  801 FREQ(2,J,2)= FREQ(2,J,1) *100.0 / PROJ1(1,J,1)
C   COMPUTE RATIOS FOR COMPUTATION OF PROJECTIONS I=3,14
        DO900 I=3,14
        SS=0.0
        S=0.0
        DO901 J=1,5
        JI=J+1
        IJ=I-1
        S=FREQ(I,JI,1)+S
901     SS=FREQ(IJ,J,1)+SS
  900 PROJ1(I,6,2)= S/SS
C   COMPUTE RATIO FOR I=2   PROJECTIONS
        SST=0.0
        ST=0.0
```

```
      DO902I=2,6
902   ST=FREQ(2,I,1)+ST
      DO 903 I= 2,5
  903 SST= PROJ1(1,I,1) + SST
      SST=FREQ(1,1,1)+SST
      PROJ1(2,6,2) = ST/SST
C  COMPUTE PERCENTS  J=1,5 I=2
C                                        KINDERGARTEN  PROJECTIONS
      DO 200 J=1,5
      K=J+1
      PROJ1(2,J,1)= PROJ1(2,6,2) *  FREQ(1,K,1)
  200 PROJ1(2,J,2)= PROJ1(2,6,2) * 100.0
C  COMPUTE PERCENTS AND FREQUENCIES I=3,14  J=1,5
C                                        GRADES 1-12   PROJECTIONS
      DO 300 I=3,14
      L=I-1
      DO 310 J=2,5
      K=J-1
      PROJ1(I,J,1)= PROJ1(L,K,1) * PROJ1(I,5,2)
  310 PROJ1(I,J,2)= PROJ1(I,6,2) * 100.0
      PROJ1(I,1,1)= FREQ (L,6,1) * PROJ1(I,5,2)
  300 PROJ1(I,1,2)= PROJ1(I,6,2) * 100.0
C  COMPUTE SUMS AND TOTALS   FREQ AND PROJ1
      DO 850 J=1,6
      DO 860 I=1,4
      K=I+14
      IL1=IS(I,1)
      IL2=IS(I,2)
      DO 870 L=IL1,IL2
      FREQ(K,J,1)= FREQ(K,J,1) + FREQ(L,J,1)
      PROJ1(K,J,1)=PROJ1(K,J,1) + PROJ1(L,J,1)
  870 CONTINUE
  860 CONTINUE
  850 CONTINUE
      DO 880 I=15,18
      DO 890 J=2,5
      JL= J-1
      FREQ(I,J,2)=  ( FREQ(I,J,1) / FREQ(I,JL,1) ) * 100.0
      PROJ1(I,J,2)= (PROJ1(I,J,1) /PROJ1(I,JL,1) ) * 100.0
  890 CONTINUE
      PROJ1(I,1,2)= ( PROJ1(I,1,1)/ FREQ(I,6,1)) * 100.0
  880 CONTINUE
      CALL TABLES( FREQ,1,D,ID,ISUM,IYRS,IS)                          C
      CALL TABLES(PROJ1,2,D,ID,ISUM,IYRS,IS)                          C
C     CALCULATE  PROJ2 USING LAST YEARS PERCENTAGES
C          KINDERGARTEN
      DO 2000 J=1,5
      K=J+1
      PROJ2(2,J,1)=( FREQ(2,6,2)/100.0) * FREQ(1,K,1)
      PROJ2(2,J,2)=  FREQ(2,6,2)
 2000 CONTINUE
C          GRADES 1-12
      DO 2015 I=3,14
      L=I-1
      PROJ2(I,1,1)=(FREQ(I,5,2)/100.0)*FREQ(L,6,1)
      PROJ2(I,1,2)=FREQ(I,6,2)
      DO 2010 J=2,5
      K=J-1
      PROJ2(I,J,1)= ( FREQ(I,6,2)/100.0) *PROJ2(L,K,1)
      PROJ2(I,J,2)=   FREQ(I,6,2)
 2010 CONTINUE
 2015 CONTINUE
C          SUMS
      DO 2020 J=1,5
      DO 2030 I= 1,4
      K= I+14
      IS1=IS(I,1)
      IS2=IS(I,2)
      DO 2040 L=IS1,IS2
      PROJ2(K,J,1) = PROJ2(L,J,1) + PROJ2(L,J,1)
 2040 CONTINUE
 2030 CONTINUE
 2020 CONTINUE
      DO 2050 I=15,18
      DO 2060 J=2,5
      JL=J-1
 2060 PROJ2(I,J,2)=( PROJ2(I,J,1)/PROJ2(I,JL,1)) *100.0
      PROJ2(I,1,2)= ( PROJ2(I,1,1)/ FREQ(I,5,1)) *100.0
 2050 CONTINUE
      CALL TABLES(PROJ2,3,D,ID,ISUM,IYRS,IS)                          C
C CALCULATE PROJ4 BASED ON A LINEAR PROJECTION ACROSS THE GRADE LEVEL
```

```
      DO 3000 I=2,14
      SXY=SY=0.0
      DO 3010 J=2,6
      SXY=SXY + (J-1) * FREQ(I,J,2)/100.0
      SY=SY + FREQ(I,J,2)/100.0
 3010 CONTINUE
      SLOPE= (5.0*SXY - 15.0*SY)/50.0
      DO 3020 J=1,5
      K=J+5
      YCEPT= SY/5.0 - SLOPE * 3.0
      PROJ4(I,J,2)=YCEPT + SLOPE *K
 3020 CONTINUE
 3000 CONTINUE
C     KINDERGARTEN PROJECTIONS
      DO 3030 J=1,5
      K=J+1
      PROJ4(2,J,1)=PROJ4(2,J,2) * FREQ(1,K,1)
 3030 PROJ4(2,J,2)= PROJ4(2,J,2)*100.0
C     GRADES 1-12 PROJECTIONS
      DO 3040 I=3,14
      L=I-1
      DO 3050 J=2,5
      K=J-1
      PROJ4(I,J,1)= PROJ4(I,J,2) * PROJ4(L,K,1)
 3050 PROJ4(I,J,2)=PROJ4(I,J,2)*100.0
      PROJ4(I,1,1)=PROJ4(I,1,2)*FREQ(L,6,1)
      PROJ4(I,1,2)=PROJ4(I,1,2)*100.0
 3040 CONTINUE
C     COMPUTE SUMS AND TOTALS
      DO 3060 J=1,5
      DO 3060 I=1,4
      K=I+14
      IL1=IS(I,1)
      IL2=IS(I,2)
      DO 3070 L=IL1,IL2
      PROJ4(K,J,1)=PROJ4(K,J,1)+PROJ4(L,J,1)
 3070 CONTINUE
 3060 CONTINUE
      CALL TABLES(PROJ4,4,0,ID,ISUM,IYRS,IS)                          C
C     CALCULATE PROJ3 AS AN AVERAGE OF PROJ1 AND PROJ2.P
      DO 2100 I=2,18
      DO 2100 J=1,5
      PROJ3(I,J,1)= (PROJ1(I,J,1) + PROJ2(I,J,1))/2.0
      PROJ3(I,J,2)= (PROJ1(I,J,2) + PROJ2(I,J,2))/2.0
 2100 CONTINUE
      CALL TABLES(PROJ3,5,0,ID,ISUM,IYRS,IS)                          C
      CALL GRAPH(FREQ,PROJ1,2,ID,0,6,IYRS,ISUM)
      CALL GRAPH(FREQ,PROJ2,3,ID,0,7,IYRS,ISUM)
      CALL GRAPH(FREQ,PROJ4,4,ID,0,8,IYRS,ISUM)
      CALL GRAPH(FREQ,PROJ3,5,ID,0,9,IYRS,ISUM)
 5000 CONTINUE
      GO TO 204
  201 WRITE(3,202)
  202 FORMAT(≠1≠,≠ALL OF THE ENROLLMENTS HAVE NOT BEEN INCLUDED OR ONE I
     /S ZERO.  THIS PROGRAM WILL NOT ACCEPT ZERO ENROLLMENTS.  YOUR INPU
     /T FOLLOWS≠)
      DO700I=1,14
  700 WRITE(3,203)(FREQ(I,J,1),J=1,6)
  203 FORMAT(≠ ≠,6F12.0)
  204 CONTINUE
      WRITE 727
  727 FORMAT(1H1)
C        READ IN N, NUMBER IF VOCED PROGRAMS, AND NN, NUMBER OF PROJECTED YEARS.
      READ 282, N,NN
  282 FORMAT(1X,I2,1X,I1)
C        BEGIN READING IN DATA TO BE USED IN ALL THREE METHODS OF TAB TWO.
      DO 50 I=1,N
      READ 904,   NAME1(I),NAME2(I),FPS1(I),FPS2(I),FPS3(I),FPE1(I),
     1FPE2(I),FPE3(I),FCSI(I),                                FWT1(I),
     2FWT2(I)
  904 FORMAT(2A10,3F3.0,1X,3F3.0,1X,F3.0,19X,F4.2,F4.2)
   50 CONTINUE
C        CALL SUBROUTINE TAB TWO,II TO PROJECT PROGRAM ENROLLMENTS BASED
C        ON STUDENT INTEREST.
      CALL TAB 2II(N,NN)
C        CALL SUBROUTINE TAB TWO,IV TO PROJECT PROGRAM ENROLLMENTS BASED
C        ON FUTURE HIGH SCHOOL ENROLLMENTS.
      CALL TAB 2IV(N,NN)
C        CALL SUBROUTINE TAB TWO,COMBO TO PROJECT PROGRAM ENROLLMENTS BASED
C        ON A COMBINATION OF THE PREVIOUS TWO METHODS.
      CALL COMBO(N,NN)
```

```
      DO 20 I=1,N
C        BEGIN READING IN DATA TO BE USED IN TAB THREE.
      READ 69,NAME1(I),NAME2(I),PLC1(I),PLC2(I),PLC3(I),DEM1(I),DEM2(I),
     +DEM3(I),(PDM(I,K),K=1,5)
   69 FORMAT(A10,A4,1X,F3.0,1X,F3.0,1X,F3.0,F5.0,F5.0,F5.0,1X,5F4.0)
   20 CONTINUE
C        CALL SUBROUTINE TAB THREE TO PROJECT PROGRAM ENROLLMENTS BASED ON
C        PRESENT AND FUTURE JOB DEMAND.
      CALL TAB3(N,NN)
      DO 43 I=1,N
C        BEGIN READING IN DATA TO BE USED IN TAB FOUR.
      READ 1024, NAME1(I),NAME2(I),DSRP(I),DSIR(I)
 1024 FORMAT(A10,A5,5X,F4.2,1X,F4.2)
   43 CONTINUE
C        CALL SUBROUTINE TAB FOUR TO PROJECT PROGRAM ENROLLMENTS BASED
C        ON ADMINISTRATOR'S WEIGHING OF TABS TWO AND THREE.
      CALL TAB4(N,NN)
      DO 41 I=1,N
C        BEGIN READING IN DATA TO BE USED IN TAB FIVE.
      READ 228,NAME1(I),NAME2(I),FER(I),TSA(I)
  228 FORMAT(A10,A5,4X,F3.0,1X,F4.2)
   41 CONTINUE
C        CALL SUBROUTINE TAB FIVE TO PROJECT TEACHING STAFF NEEDS BASED
C        ON RESULTS OF TAB FOUR.
      CALL TAB5(N,NN)
      DO 22 I=1,N
C        BEGIN READING IN DATA TO BE USED IN TAB SIX.
      READ 232,NAME1(I),NAME2(I),SC(I),FIF(I),NSC(I)
  232 FORMAT(A10,A5,10X,F5.0,1X,F4.2,6X,F5.0)
   22 CONTINUE
C        CALL SUBROUTINE TAB SIX TO PROJECT STAFF COSTS.
      CALL TAB6(N,NN)
      DO91 I=1,N
C        BEGIN READING IN DATA TO BE USED IN TAB SEVEN.
      READ 278,NAME1(I),NAME2(I),TS(I),POUT(I),GIF(I)
  278 FORMAT(A10,A5,F3.0,1X,F5.0,1X,F4.2)
   91 CONTINUE
C        CALL SUBROUTINE TAB SEVEN TO PROJECT CAPITAL COSTS BY PROGRAM.
      CALL TAB7(N,NN)
      DO92 I=1,N
C        BEGIN READING IN DATA TO BE USED IN TAB EIGHT.
      READ 243,NAME1(I),NAME2(I),TCC(I),HIF(I)
  243 FORMAT(A10,A5,4X,F5.0,1X,F4.2)
   92 CONTINUE
C        FINALLY, CALL SUBROUTINE TAB EIGHT TO PROJECT TOTAL CONSUMABLES
C        COSTS FOR EACH PROGRAM.
      CALL TAB8(N,NN)
      END
      SUBROUTINE TABLES( A,ITIME,D,ID,ISUM,IYRS,IS)
      DIMENSION A(18,6,2),D(2),ID(2),ISUM(4,2),IYRS(11,2),N(14),IS(4,2)
      DATA (N(I),I=1,14)/6HBIRTHS,2H K,2H 1,2H 2,2H 3,2H 4,2H 5,2H 6,
     1 2H 7,2H 8,2H 9,2H10,2H11,2H12/
      IF(ITIME.GT.1)GO TO 300
      WRITE(3,10)ID,D
   10 FORMAT(1HT,29X,2A10,2A4/1H0,29X,*TABLE 1 ACTUAL ENROLLMENTS*,60X,
     1 *PAGE 1*//)
      WRITE(3,20)((IYRS(I,J),J=1,2),I=1,6)
   20 FORMAT(1H ,*GRADE     *, 6(2X,I2,* - *,I2,1X))
   30 FORMAT(1H ,*.....
     1.....*)
   40 FORMAT(1H ,*       .          .          .          .          .
     1          .          *)
   50 FORMAT(1H ,2X,A6,1X, 5(*.*,F7.0,2X))
      DO 80 I=2,4
      WRITE(3,30)
      WRITE(3,40)
      WRITE(3,60)N(I),(A(I,J,1),J=1,6)
   60 FORMAT(1H ,4X,A2,3X, 6(*.*F7.0,2X),*.*)
      WRITE(3,70)     (A(I,J,2),J=2,6)
   70 FORMAT(1H ,*          .          *5(*.*,F9.2),*.*)
   80 CONTINUE
      WRITE(3,90)
   90 FORMAT(1H ,*.....
     1.....*,5X,*                ASSUMPTIONS FOR ALL PROJECTIONS
     2        *)
      WRITE(3,40)
      WRITE(3,100) N(5),(A(5,J,1),J=1,6)
  100 FORMAT(1H ,4X,A2,3X,6(*.*,F7.0,2X),*.*,
     1                  5X,*1.  PROJECTIONS IMPROVE AS THE SIZE OF THE S
     2CHOOL *)
      WRITE(3,110)       (A(5,J,2),J=2,6)
```

```
  110 FORMAT(1H ,*                              *5(*,*,F9.2),*.*,
     1                 5X,*     DISTRICT INCREASES.
     2       *)
      WRITE(3,30)
      WRITE(3,120)
  120 FORMAT(1H ,*
     1      .*,5X,*2.  THESE PROJECTIONS ASSUME NO UNUSUAL CHAN
     2GES IN*)
      WRITE(3,130) N(6),(A(6,J,1),J=1,6)
  130 FORMAT(1H ,4X,A2,3X,6(*.*,F7.0,2X),*.*,
     1                 5X,*     THE CHARACTERISTICS OF THE SCHOOL DISTRI
     2CT     *)
      WRITE(3,140)       (A(6,J,2),J=2,6)
  140 FORMAT(1H ,*                              *5(*,*,F9.2),*.*,
     1                 5X,*     SUCH AS BOUNDARY CHANGES OR CLOSURES OF
     2 A     *)
      WRITE(3,150)
  150 FORMAT(1H ,*.....*,5X,*     PRIVATE EDUCATIONAL FACILITY IN THE AREA
     2.      *)
      WRITE(3,40)
      WRITE(3, 60) N(7),(A(7,J,1),J=1,6)
CP    WRITE(3,160) N(7),(A(7,J,1),J=1,6)
  160 FORMAT(1H ,4X,A2,3X,6(*.*,F7.0,2X),*.*,
     1                 5X,*3.  THAT IN MIGRATION IS EQUAL TO OUTMIGRATI
     2ON.    *)
      WRITE(3,70)        (A(7,J,2),J=2,6)
      WRITE(3,170)
  170 FORMAT(1H ,*.....*,5X,*3.  FOUR  DIFFERENT METHODS OF PROJECTION HA
     2VE     *)
      WRITE(3,180)
  180 FORMAT(1H ,*
     1      .*,5X,*     BEEN USED.  ASSUMPTIONS ASSOCIATED WITH
     2EACH   *)
      WRITE(3,190) N(8),(A(8,J,1),J=1,6)
  190 FORMAT(1H ,4X,A2,3X,6(*.*,F7.0,2X),*.*,
     1                 5X,*     METHOD WILL BE PROVIDED.
     2       *)
      WRITE(3,70)        (A(8,J,2),J=2,6)
      WRITE(3,200)
  200 FORMAT(1H ,*.....*,5X,*     PLEASE CHECK TABLE 1 CAREFULLY WITH YOUR
     2       *)
      WRITE(3,210)
  210 FORMAT(1H ,*
     1      .*,5X,*RECORDS.  MISTAKES IN THE DATA WILL GREATLY
     2       *)
      WRITE(3,215) N(9),(A(9,J,1),J=1,6)
  215 FORMAT(1H ,4X,A2,3X,6(*.*,F7.0,2X),*.*,
     1                 5X,*AFFECT THE ACCURACY OF THE PROJECTIONS.
     2       *)
      WRITE(3,70)        (A(9,J,2),J=2,6)
      DO 220 I=10,14
      WRITE(3,30)
      WRITE(3,40)
      WRITE(3,60) N(I),(A(I,J,1),J=1,6)
      WRITE(3,70)       (A(I,J,2),J=2,6)
  220 CONTINUE
      WRITE(3,30)
      WRITE(3,230)
  230 FORMAT(1H0,30X,*SUMMARY TABLES*/)
      DO 240 I=15,18
      WRITE(3,30)
      WRITE(3,40)
      L=I-14
      WRITE(3,250)ISUM(L,1),ISUM(L,2),(A(I,J,1),J=1,6)
  250 FORMAT(1H ,2X,A2,*-*,A2,2X,6(*.*,F7.0,2X),*.*)
C     WRITE(3,260)                        (A(J,J,2),J=2,6)
  260 FORMAT(1H ,*                          *5(*.*,F9.2),*.*)
      WRITE(3,40)
  240 CONTINUE
      WRITE(3,30)
      RETURN
C PRINT OUT PROJECTION TABLES
  300 WRITE(3,310)ID,D,ITIME,(ITIME-1),ITIME
  310 FORMAT(1HT,27X,2A10,2A4/1H0,22X,*TABLE *,I2,* ENROLLMENTS PROJECTE
     1D USING METHOD*,I2,60X,*PAGE *,I2//)
      WRITE(3,25)((IYRS(I,J),J=1,2),I=7,11)
   25 FORMAT(1H ,11X,*  GRADE   *,6(2X,I2,* - *,I2,1X))
  320 FORMAT(1H ,10X,*.....
```

```
     1..........*)
  330 FORMAT(1H ,10X,*          .          .          .          .          .
     1          .*)
         DO 340 I=2,4
         WRITE(3,320)
         WRITE(3,330)
         WRITE(3,350) N(I),(A(I,J,1),J=1,5)
  350 FORMAT(1H ,10X,4X,A2,3X,5(*.*,F7.0,2X),*.*)
         WRITE(3,360)       (A(I,J,2),J=1,5)
  360 FORMAT(1H ,10X,9X,5(*.*,F9.2),*.*)
  340 CONTINUE
         WRITE(3,450)(ITIME-1)
  450 FORMAT(1H ,10X,*.....
     1..........*, 5X,*        ASSUMPTIONS FOR PROJECTION METHOD *,I2)
         WRITE(3,330)
         GO TO (400,400,500,550,600),ITIME
C    TABLE 2 MESSAGE
  400 WRITE(3,410 ) N(5),(A(5,J,1),J=1,5)
  410 FORMAT(1H ,10X,4X,A2,3X,5(*.*,F7.0,2X),*.*,
     1                   5X,*     PROJECTIONS ARE BASED ON THE LAST FIVE Y
     2EARS  *)
         WRITE(3,420)       (A(5,J,2),J=1,5)
  420 FORMAT(1H ,10X,9X,5(*.*,F9.2),*.*,
     1                   5X,*     SURVIVAL RATE.
     2       *)
         ISTART=6
         GO TO 700
C    TABLE 3 MESSAGE
  500 WRITE(3,510) N(5),(A(5,J,1),J=1,5)
  510 FORMAT(1H ,10X,4X,A2,3X,5(*.*,F7.0,2X),*.*,
     1                   5X,*     PROJECTIONS ARE BASED ON THE LAST YEARS
     2          *)
         WRITE(3,420)       (A(5,J,2),J=1,5)
         ISTART=6
         GO TO 700
C    TABLE 4 MESSAGE
  550 WRITE(3,560) N(5),(A(5,J,1),J=1,5)
  560 FORMAT(1H ,10X,4X,A2,3X,5(*.*,F7.0,2X),*.*,
     1                   5X,*     PROJECTIONS ARE BASED ON A LINEAR TREND
     2 ACROSS*)
  570 FORMAT(1H ,10X,9X,5(*.*,F9.2),*.*,
     1                   5X,*     EACH GRADE.
     2          *)
         WRITE(3,570)       (A(5,J,2),J=1,5)
         ISTART=6
         GO TO 700
C    TABLE 5 MESSAGE
  600 WRITE(3,610) N(5),(A(5,J,1),J=1,5)
  610 FORMAT(1H ,10X,4X,A2,3X,5(*.*,F7.0,2X),*.*,
     1                   5X,*1.   THESE PROJECTIONS ARE THE AVERAGE OF THE
     2          *)
         WRITE(3,620)       (A(5,J,2),J=1,5)
  620 FORMAT(1H ,10X,9X,5(*.*,F9.2),*.*,
     1                   5X,*     PROJECTIONS FOUND IN TABLES 2 AND 3.
     2          *)
         WRITE(3,320)
         WRITE(3,630)
  630 FORMAT(1H ,10X,*
     1          .*,         5X,*2.  THIS METHOD WILL MINIMIZE EXTREMES FOUND
     2 IN       *)
         WRITE(3,640) N(6),(A(6,J,1),J=1,5)
  640 FORMAT(1H ,10X,4X,A2,3X,5(*.*,F7.0,2X),*.*,
     1                   5X,*     TABLES 2, AND 3.
     2          *)
         WRITE(3,360)       (A(6,J,2),J=1,5)
         ISTART=7
C FINISH PROJECTION TABLES
  700 DO 710 I=ISTART,14
         WRITE(3,320)
         WRITE(3,330)
         WRITE(3,350) N(I),(A(I,J,1),J=1,5)
         WRITE(3,360)       (A(I,J,2),J=1,5)
  710 CONTINUE
C     SUMMARY TABLES FOR PROJECTIONS
         WRITE(3,320)
         WRITE(3,230)
         DO 720 I=15,18
         WRITE(3,320)
         WRITE(3,330)
         L=I-14
         WRITE(3,730)ISUM(L,1),ISUM(L,2),(A(I,J,1),J=1,5)
```

```
  730 FORMAT(1H ,12X,A2,*-*,A2,2X,5(*.*,F7.0,2X),*.*)
C     WRITE(3,740)                (A(I,J,2),J=1,5)
  740 FORMAT(1H ,10X,9X,5(*.*,F9.2),*.*)
      WRITE(3,330)
  720 CONTINUE
      WRITE(3,320)
      RETURN
      END
      SUBROUTINE GRAPH(AX,PX,N,ID,D,PG,IYRS ,ISUM)
      INTEGER PG
      DIMENSION AX(18,6,2),PX(18,6,2),IPT(11,4),ISY(5),ILN(45),ISUM(4,2)
      DIMENSION IYRS(11,2),ID(2),D(2)
      DATA(ISY(I),I=1,5)/1H*,1H+,1H=,1H-,1H /
      WRITE(3,10)ID,D,N,PG
   10 FORMAT(1HT,29X,2A10,2A4/1H0,29X,*GRAPH OF SUMMARY TABLES 1 AND *,
     1I2,60X,* PAGE *,I2/)
      WRITE(3,15)
   15 FORMAT(1H ,*PERCENTAGES *)
      WRITE(3,20)
   20 FORMAT(1H ,5X,*    .    .    .    .    .    .    .    .    /
     1.    .    .    .    .*)
      DO 100 I=1,4
      J=I+14
C  ACTUAL ENROLLMENTS
      DO 120 K=1,6                                                    C
      INUM=F=(((AX(J,K,1)-AX(J ,1,1))/AX(J ,1,1))+.005)* 100.0        C
      INUM=21 - INUM
      IF(INUM.GT.51)INUM=51
      IF(INUM.LT.1)INUM=1
      IPT(K,I)=INUM
  120 CONTINUE
C  PROJECTED ENROLLMENTS
      DO 130 K=1,5
      L=K+6
      INUM=F= ((PX(J,K,1)-AX(J ,1,1))/AX(J ,1,1)+.005)*100.0          C
      INUM=21- INUM
      IF(INUM.GT.51)INUM=51
      IF(INUM.LT.1)INUM=1
      IPT(L,I)=INUM
  130 CONTINUE
  100 CONTINUE
      DO 200 I=1,51
      LINE=21 - I
      J=MOD(LINE,5)
      ILN(1)=0
      IF(J.EQ.0)ILN(1)=LINE
      DO 210 K=2,45
      ILN(K)=ISY(5)
  210 CONTINUE
      LN=1
      DO 220 J=1,4
      DO 230 K=1,11
      LN=LN+1
      IF(I.EQ.IPT(K,J))ILN(LN)=ISY(J)
  230 CONTINUE
  220 CONTINUE
      IF(I.EQ.21)GO TO 240
      WRITE(3,250)(ILN(J),J=1,45)
  250 FORMAT(1H ,I5.0,*    .*,6(5X,A1),*    /*,5(5X,A1),*    .*/
     1   1H+,10X,6(5X,A1),5X,5(5X,A1)/
     2   1H+,10X,6(5X,A1),5X,5(5X,A1)/
     3   1H+,10X,6(5X,A1),5X,5(5X,A1))
      GO TO 200
  240 WRITE(3,255)(ILN(J),J=2,45)
  255 FORMAT(1H ,*    0*,*    .*,6(5X,A1),*    /*,5(5X,A1),*    .*/
     1   1H+,10X,6(5X,A1),5X,5(5X,A1)/
     2   1H+,10X,6(5X,A1),5X,5(5X,A1)/
     3   1H+,10X,6(5X,A1),5X,5(5X,A1))
  200 CONTINUE
      WRITE(3,20)
      WRITE(3,270)((IYRS(I,J),J=1,2),I=1,11)
  270 FORMAT(1H ,*YEARS - *,5X,6(I2,*-*,I2,1X),5X,5(I2,*-*,I2,1X)/
     11H ,26X,*ACTUAL DATA *,25X,*PROJECTED DATA*)
      WRITE(3,280)ISUM(1,1),ISUM(1,2),ISY(1),IYRS(1,1),IYRS(1,2),     C
     1   ((ISUM(L,K),K=1,2),ISY(L),L=2,4)
  280 FORMAT(1H0,9X,*LEGEND*,28X,*ASSUMPTIONS*/
     1 1H0,*THE SYMBOL FOR *,A2,*-*,A2,* IS *,A1,
     A  5X,*A. THE YEAR *,I2,*-*,I2,* IS THE BASE.*/
     2 1H0,*THE SYMBOL FOR *,A2,*-*,A2,* IS *,A1,
     B  5X,*B. EACH YEARS ENROLLMENT IS COMPARED TO THE BASE.*/
     3 1H0,*THE SYMBOL FOR *,A2,*-*,A2,* IS *,A1,
```

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     C  5X,*C. ANY PERCENTAGES THAT ARE GREATER THAN A 20 PERCENT*/
     D 1H ,30X,*   INCREASE APPEAR AT THE TOP OF THE GRAPH.*/
     4 1H0,*THE SYMBOL FOR *,A2,*-*,A2,* IS *,A1,
     E  5X,*D. ANY PERCENTAGES LESS THAN A 30 PERCENT DECREASE*/
     F 1H ,30X,*   APPEAR AT THE BOTTOM OF THE GRAPH.*)
      RETURN
      END
      SUBROUTINE TAB 2II(N,NN)
      COMMON/X/FREQ(18,6,2),IYRS(11,2),                PROJ1(18,6,2)
      COMMON /ALL/ NAME1(50),NAME2(50),          FMM(50,5),XX(50,5),
     +COMB(50,5),Q(50,5),SM(50,5),RR(50,5),TSA(50),TADJ(50,5),TS(50),
     +TPSC(50,5),PCOUT(50,5),TPC(50,5),TOT(50,5)
      COMMON/TWO/ FPS1(50),FPS2(50),FPS3(50),FPE1(50),FPE2(50),FPE3(50),
     +FCSI(50)
      DIMENSION F(50,5),G(50,5),FN(50,5),              X(50,5)
C        INTRODUCE TAB TWO, METHOD TWO.
      WRITE 762
  762 FORMAT(15X,12HINTRODUCTION,10X,*METHOD TWO OF TAB TWO USES THE RES
     +ULTS OF STUDENT INTEREST SURVEYS*/35X,*AND TESTS TOGETHER WITH ACT
     +UAL ENROLLMENTS IN PROGRAMS TO PROJECT*/35X,*FUTURE ENROLLMENT IN
     +VOCATIONAL PROGRAMS.*/15X,11HDEFINITIONS,9X,*1. AVERAGE PAST INTER
     +EST TEST-AVERAGE NUMBER OF STUDENTS WHO*/35X,*EXPRESSED INTEREST I
     +N A PARTICULAR OCCUPATION.*/35X,*2. ACTUAL AVERAGE TEST CLASS ENRO
     +LLMENT-THE ACTUAL ENROLLMENT*/35X,*IN EACH PROGRAM (CORRESPONDING
     +TO THE OCCUPATION WHICH THE STUDENT*/35X,*EXPRESSED INTEREST IN) O
     +F THE TEST CLASS.*/15X,20X,*3. ATTRITION RATE-PERCENTAGE DECREASE
     +(OR INCREASE) BETWEEN THE*/35X,*EXPRESSED INTEREST AND THE ACTUAL INTEREST
     +INTEREST AS EXPRESSED BY ENROLLMENT.*/15X,12HCOMPUTATIONS,8X,*COLUMN 4=COL
     +MN 4=COLUMN 3/COLUMN 2*/35X,*COLUMN 6=COLUMN 4.COLUMN 5*//)
      J=1
C        WRITE HEADINGS.
  800 WRITE 1000,J
 1000 FORMAT(66X,7HTAB TWO//65X,10HMETHOD TWO//63X,*PLANNING YEAR*,1X,I1
     +,//1X,136(1H.)/24X,12HAVERAGE PAST,11X,12HAVERAGE TEST,
     +          12X,9HATTRITION,15X,7HCURRENT,15X,9HPROJECTED,/3X,7
     2HPROGRAM,14X,13HINTEREST TEST,3X,16HCLASS ENROLLMENT,12X,4HRATE,15
     3X,13HINTEREST TEST,9X,16HSTUDENT INTEREST/1X,136(1H.)///)
C        VARIABLE LIST-
C           J=PLANNING YEAR(1 THROUGH 5)
C           FPS=PAST STUDENT INTEREST BASED ON SURVEY TESTS.
C           FPE=PAST ACTUAL ENROLLMENTS IN PROGRAMS.
C           FCSI=PRESENT STUDENT INTEREST.
C           PROJ1= PROJECTED ENROLLMENTS, GRADES 11 + 12, FROM TAB 1, METHOD ONE
C           F=AVERAGE PAST STUDENT INTEREST.
C           G=AVERAGE PAST PROGRAM ENROLLMENTS.
C           FN=ATTRITION RATE BETWEEN INTEREST AND ENROLLMENT.
C           FMM=PROJECTED STUDENT INTEREST.
      DO 50 I=1,N
C        PERFORM COMPUTATIONS.
      F(I,J)=(FPS1(I)+FPS2(I)+FPS3(I))/3.0
      G(I,J)=(FPE1(I)+FPE2(I)+FPE3(I))/3.0
      FN(I,J)=G(I,J)/F(I,J)
      IF(J.EQ.1)55,56
   55 FMM(I,J)=FCSI(I)*FN(I,J)
      GO TO 57
   56 X(I,J)=FCSI(I)/PROJ1(17,1,1)
      FMM(I,J)=X(I,J)*PROJ1(17,J,1)
C        WRITE OUTPUT.
   57 WRITE 1015,NAME1(I),NAME2(I), F(I,J),G(I,J),FN(I,J),FCSI(I),FMM(I,
     +J)
 1015  FORMAT(1X,2A10,7X,F4.0,18X,F4.0,18X,F5.3,20X,F4.0,18X,F4.0)
   50 CONTINUE
      WRITE828
  828 FORMAT(1H1)
      J=J+1
      IF(J.LE.NN)800,900
  900 RETURN
      END
      SUBROUTINE TAB 2IV(N,NN)
      COMMON/X/FREQ(18,6,2),IYRS(11,2),                PROJ1(18,6,2)
      COMMON /ALL/ NAME1(50),NAME2(50),          FMM(50,5),XX(50,5),
     +COMB(50,5),Q(50,5),SM(50,5),RR(50,5),TSA(50),TADJ(50,5),TS(50),
     +TPSC(50,5),PCOUT(50,5),TPC(50,5),TOT(50,5)
      COMMON/TWO/ FPS1(50),FPS2(50),FPS3(50),FPE1(50),FPE2(50),FPE3(50),
     +FCSI(50)
      DIMENSION F(50,5),G(50,5),FN(50,5)
C        INTRODUCE TAB TWO, METHOD FOUR.
      WRITE 763
  763 FORMAT(15X,12HINTRODUCTION,10X,*METHOD FOUR RELIES ON HISTORICAL P
     +ATTERNS OF ENROLLMENT BY PROGRAM*/35X,*IN COMBINATION WITH A PROJECTION OF
     +CTION OF TOTAL NUMBERS OF STUDENTS*/35X,*FROM TAB ONE.*/15X,12HCOM
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     +PUTATIONS,
     +8X,                *COLUMN 4=COLUMN 2/COLUMN 3 */35X,*COLUMN 6=COLUMN 4.COLUMN 5*
     +OLUMN 5*//)
      K=4
      J=1
C        WRITE HEADINGS.
  801 WRITE 1001,J
 1001  FORMAT(67X,7HTAB TWO//65X,11HMETHOD FOUR//63X,*PLANNING YEAR*,1X,
     +I1//1X,136(1H.)/24X,12HAVERAGE PAST,11X,12HAVERAGE PAST,
     +   12X,10HENROLLMENT,10X,15HPROJECTED TOTAL,7X,17HPROJECTED PROGRAM
     2M/3X,7HPROGRAM,11X,18HPROGRAM ENROLLMENT,6X,16HTOTAL ENROLLMENT,10
     3X,10HPERCENTAGE,12X,10HENROLLMENT,13X,10HENROLLMENT/1X,136(1H.)//)
C        VARIABLE LIST-
C           FPE=PAST PROGRAM ENROLLMENTS.
C           FREQ=ACTUAL PAST AND PRESENT 11TH AND 12TH GRADE ENROLLMENTS.
C           PROJ1=PROJECTED 11TH AND 12TH GRADE ENROLLMENTS FROM TAB 1,METH 1.
C           F=AVERAGE PAST ENROLLMENTS, GRADES 11 AND 12.
C           G=AVERAGE PAST PROGRAM ENROLLMENT.
C           FN=PROGRAM ENROLLMENT AS A PERCENTAGE OF HIGH SCHOOL ENROLLMENT.
C           XX=PROJECTED PROGRAM ENROLLMENT.
      DO 60 I=1,N
C        PERFORM COMPUTATIONS.
      IF(J.EQ.1) GO TO 58
      IF(J.EQ.2) GO TO 59
      IF(J.EQ.3) GO TO 77
      IF(J.GE.4) GO TO 61
  58  F(I,J)=(FREQ(17,K,1)+FREQ(17,K+1,1)+FREQ(17,K+2,1))/3.0
      GO TO 88
  59  F(I,J)=(FREQ(17,K,1)+FREQ(17,K+1,1)+PROJ1(17,J-1,1))/3.0
      GO TO 88
  77  F(I,J)=(FREQ(17,K,1)+PROJ1(17,J-2,1)+PROJ1(17,J-1,1))/3.0
      GO TO 88
  61  F(I,J)=(PROJ1(17,J-3,1)+PROJ1(17,J-2,1)+PROJ1(17,J-1,1))/3.0
  88  G(I,J)=(FPE1(I)+FPE2(I)+FPE3(I))/3.0
      FN(I,J)=G(I,J)/F(I,1)
      XX(I,J)=PROJ1(17,J,1)*FN(I,J)
C        WRITE OUTPUT.
      WRITE 1032,NAME1(I),NAME2(I),G(I,J),F(I,J),FN(I,J),PROJ1(17,J,1),
     +XX(I,J)
 1032 FORMAT(1X,2A10,7X,F4.0,18X,F5.0,18X,F5.3,18X,F5.0,19X,F4.0)
  60  CONTINUE
      WRITE 829
  829 FORMAT(1H1)
      J=J+1
      K=K+1
      IF(J.LE.NN)801,901
  901 RETURN
      END
      SUBROUTINE COMBO(N,NN)
      COMMON /ALL/ NAME1(50),NAME2(50),        FMM(50,5),XX(50,5),
     +COMB(50,5),Q(50,5),SM(50,5),RF(50,5),TSA(50),TADJ(50,5),TS(50),
     +TPSC(50,5),PCOUT(50,5),TPC(50,5),TOT(50,5)
      COMMON/CMB/ FWT1(50),FWT2(50)
      DIMENSION F(50,5),G(50,5)
C        INTRODUCE TAB TWO, COMBINATION OF METHODS.
      WRITE 769
  769 FORMAT(15X,12HINTRODUCTION,10X,*IF ONE OR MORE METHODS ARE USED TO
     + PROJECT STUDENT INTEREST OF*/35X,*PROGRAM ENROLLMENT, THIS PORTION OF TAB
     +N OF TAB TWO UTILIZES A WEIGHTED*/35X,*MEAN WHICH COMBINES THE PRO
     +JECTIONS OF ANY PREVIOUS METHODS.*/35X,*THE WEIGHTED MEAN ALLOWS T
     +HE ADMINISTRATOR TO AVERAGE PREVIOUS*/35X,*RESULTS WITH THE PROVIS
     +ION THAT ONE METHOD CAN BE ASSIGNED MORE*/35X,*IMPORTANCE THAN  TH
     +E OTHER.*/15X,12HCOMPUTATIONS,8X,*COLUMN 4=COLUMN 2.COLUMN 3*/35X,*COLUMN
     +*COLUMN 7=COLUMN 5.COLUMN 6*/35X,*COLUMN 8=COLUMN 4+COLUMN 7*//)
      J=1
C        WRITE HEADINGS.
  802 WRITE 1002 ,J
 1002 FORMAT(67X,7HTAB TWO//58X,22HCOMBINATION OF METHODS//   61X,*PLANN
     +ING YEAR*,1X,I1//1X,136(1H.)/15X,16HSTUDENT INTEREST,1X,
     +  16HSTUDENT INTEREST,3X,10HFACTOR ONE,3X,16HSTUDENT INTEREST,1X,16
     2HSTUDENT INTEREST,4X,10HFACTOR TWO,3X,17HPROJECTED PROGRAM/3X,7HPR
     3OGRAM,8X,10HMETHOD TWO,7X,10HWEIGHT ONE,9X,7HPARTIAL,9X,11HMETHOD
     +FOUR,6X,10HWEIGHT TWO,8X,7HPARTIAL,8X,10HENROLLMENT/1X,136(1H.)//)
C        VARIABLE LIST-
C           FMM=PROJECTED RESULTS OF TAB TWO, METHOD TWO.
C           FWT1=A FACTOR WEIGHT PLACED ON RESULTS OF 2,II
C           F=FACTOR ONE PARTIAL, PRODUCT OF TWO PRECEDING VARIABLES.
C           XX=PROJECTED RESULTS OF TAB TWO, METHOD FOUR.
C           FWT2=A FACTOR WEIGHT PLACED ON THE RESULTS OF 2,IV.
C           G=FACTOR 2 PARTIAL, PRODUCT OF THE 2 PRECEDING VARIABLES.
C           COMB=RESULTING PROJECTIONS.
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      DO 70 I=1,N
C        PERFORM COMPUTATIONS.
      F(I,J)=FMM(I,J)*FWT1(I)
      G(I,J)=XX(I,J)*FWT2(I)
      COMB(I,J)=F(I,J)+G(I,J)
C        WRITE OUTPUT.
      WRITE 1009,NAME1(I),NAME2(I),FMM(I,J),FWT1(I),F(I,J),XX(I,J),FWT2(I)
     +I),G(I,J),COMB(I,J)
 1009 FORMAT(1X,2A10,F4.0,11X,F5.2,13X,F6.2,11X,F4.0,13X,F5.2,12X,F6.2,1
     +0X,F4.0)
 70   CONTINUE
      J=J+1
      WRITE 668
 668  FORMAT(1H1)
      IF(J.LE.NN)802,902
 902  RETURN
      END
      SUBROUTINE TAB3(N,NN)
      COMMON /ALL/ NAME1(50),NAME2(50),       FMM(50,5),XX(50,5),
     +COMB(50,5),Q(50,5),SM(50,5),RF(50,5),TSA(50),TADJ(50,5),TS(50),
     +TPSC(50,5),PCOUT(50,5),TPC(50,5),TOT(50,5)
      COMMON/TH3/ PLC1(50),PLC2(50),PLC3(50),DEM1(50),DEM2(50),DEM3(50),
     +PDM(50,5)
      DIMENSION P(50,5)
C        INTRODUCE TAB THREE.
      WRITE 757
 757  FORMAT(15X,12HINTRODUCTION,10X,*TAB THREE INTENDS TO PROVIDE THE F
     +RAMEWORK FOR CALCULATING THE*/35X, *NUMBER OF GRADUATES OF EACH PROG
     +OGRAM THAT MAY REASONABLY BE*/35X,. *EXPECTED TO FIND JOBS USING TH
     +E SKILL THEY WERE TRAINED IN. THIS*/35X,*IS REFERRED TO AS LABOR M
     +ARKET DEMAND.*/15X,11HDEFINITIONS,9X,*1. PLACEMENT FACTOR-RATIO OF
     +  PLACEMENTS FOR A PROGRAM TO JOB*/35X,*DEMAND FOR THAT PROGRAM.*/
     +35X,*2. PROJECTED SKILL-RELATED PLACEMENT-PROJECTED PLACEMENTS BASED
     +ED*/35X,*ON PAST JOB PLACEMENT FACTOR AND PROJECTED JOB DEMAND.*/
     +15X,12HCOMPUTATIONS,8X,*COLUMN 4=COLUMN 2/COLUMN 3*/35X,*COLUMN 6=
     +COLUMN 4.COLUMN 5*//)
      J=1
C        WRITE HEADINGS.
 803  WRITE 1012,J
 1012 FORMAT(64X,9HTAB THREE//63X,*PLANNING YEAR*,1X,I1//1X,136(1H.)/24X
     +,12HPAST AVERAGE,11X,12HPAST AVERAGE, 12X,
     +  9HPLACEMENT,15X,9HPROJECTED,11X,15HPROJECTED SKILL/3X,7HPROGRAM,
     215X,10HPLACEMENTS,13X,10HJOB DEMAND,15X,6HFACTOR,16X,10HJOB DEMAND
     3,9X,17HRELATED PLACEMENT/1X,136(1H.)///)
C        VARIABLE LIST-
C           PLC=PAST JOB PLACEMENTS,PREVIOUS THREE YEARS, BY PROGRAM.
C           DEM=PAST JOB DEMAND, PREVIOUS THREE YEARS, BY PROGRAM.
C           PDM=PROJECTED JOB DEMAND BY PROGRAM OVER 5 YEARS.
C           P=PAST AVERAGE JOB PLACEMENTS/PAST AVERAGE JOB DEMAND.
C           Q=PROJECTIONS BASED ON THE PRODUCT OF P AND PROJECTED JOB DEMAND.
      DO 20 I=1,N
C        PERFORM COMPUTATIONS.
      P(I,J)=(PLC1(I)+PLC2(I)+PLC3(I))/(DEM1(I)+DEM2(I)+DEM3(I))
      Q(I,J)=P(I,J)*PDM(I,J)
C        WRITE OUTPUT.
      WRITE 555,NAME1(I),NAME2(I),PLC1(I),PLC2(I),PLC3(I),DEM1(I),DEM2(I),
     +),DEM3(I),P(I,J),PDM(I,J),Q(I,J)
 555  FORMAT(1X,A10,A4,7X,3(F4.0,1X),6X,3(F5.0,2X),9X,F4.2,19X,F5.0,18X,
     +F4.0)
 20   CONTINUE
      J=J+1
      WRITE 770
 770  FORMAT(1H1)
      IF(J.LE.NN)803,903
 903  RETURN
      END
      SUBROUTINE TAB4(N,NN)
      COMMON /ALL/ NAME1(50),NAME2(50),       FMM(50,5),XX(50,5),
     +COMB(50,5),Q(50,5),SM(50,5),RF(50,5),TSA(50),TADJ(50,5),TS(50),
     +TPSC(50,5),PCOUT(50,5),TPC(50,5),TOT(50,5)
      COMMON/FOR/ DSRP(50),DSIR(50)
      DIMENSION OPT(50,5),SIPT(50,5),SIA(50,5)
C        INTRODUCE TAB FOUR.
      WRITE 758
  758 FORMAT(15X,12HINTRODUCTION,10X,*TAB 4 IS DESIGNED TO ALLOW USE O
     +F THE PREVIOUS TABS TO CREATE*/35X,*A SINGLE PROJECTION FOR THE EN
     +ROLLMENT FOR EACH PROGRAM OR COURSE*/35X,*OF STUDY. THE TAB ALLOWS
     +  THE ADMINISTRATOR TO WEIGH THE USE OF*/35X,*LABOR MARKET OR STUDENT
     +NT INTEREST PROJECTIONS ACCORDING TO THE*/35X,*DISTRICT'S PREFERENCE.
     +CE.*/15X,11HDEFINITIONS,9X,*1. DESIRABLE STUDENT-INTEREST RATIO-A
     +DECIMAL FIGURE INDICATING*/35X,*THE AMOUNT OF STUDENT INTEREST DES
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     +IRED BY THE DISTRICT FOR EACH*/35X,*TRAINING STATION OR TRAINING
     + POSITION AVAILABLE*/35X,*2. DESIRABLE SKILL-RELATED PLACEMENT RAT
     +IO-A RATIO INDICATING*/35X,*THE PERCENT OF EACH CLASS THAT THE DISTRICT
     +TRICT EXPECTS TO SEEK*/35X,*EMPLOYMENT IN THAT FIELD DIRECTLY UPON
     + GRADUATION,AND WHOM YOU*/35X,*EXPECT TO ASSIST WITH PLACEMENT.*/
     +35X,*3. OPTIMUM PROGRAM SIZE-THE TARGET SIZE OF EACH PROGRAM IN THE
     +E*/35X,*PROJECTED YEAR,BASED ON PROJECTED JOB DEMAND AND THE DESIRABLE
     +ABLE*/35X,*SKILL-RELATED PLACEMENT RATIO.*/15X,12HCOMPUTATIONS,8X,
     +*COLUMN 4=COLUMN 2(RESULTS OF TAB 3)/COLUMN 3*/35X,*COLUMN 6=COLUMN 4*COLU
     +N 4,COLUMN 5*/35X,*COLUMN 8=COLUMN 6-COLUMN 7(RESULTS OF TAB 2)*/35X,
     +5X,*COLUMN 9=THE SMALLER FIGURE OF COLUMNS 4 AND 7*//)
      J=1
C        WRITE HEADINGS.
 804  WRITE 1023,J
 1023 FORMAT(65X,8HTAB FOUR//63X,*PLANNING YEAR*,1X,I1//1X,136(1H.)/32X,
     +13HDESIRED SKILL,32X,15HDESIRED STUDENT,
     +  4X,7HTAB TWO,22X,9HPROJECTED/14X,15HPROJECTED SKILL,3X,14HRELATE
     2D PLACE ,3X,7HOPTIMUM,3X,15HDESIRED STUDENT,3X,17HINTEREST BASED O
     3N,2X,9HPROJECTED,5X,13HADJUSTMENT IN,4X,7HPROGRAM/3X,7HPROGRAM,3X,
     417HRELATED PLACEMENT,4X,10HMENT RATIO,3X,12HPROGRAM SIZE,1X,14HINT
     5EREST RATIO,3X,17HOPT. PROGRAM SIZE,2X,10HENROLLMENT,2X,15HSTUDENT
     6INTEREST,3X,10HENROLLMENT/1X,136(1H.)//)
C        VARIABLE LIST-
CC          Q=PROJECTED RESULTS OF TAB THREE
CC          DSRP=DESIRED SKILL-RELATED PLACEMENT RATIO.
CC          OPT=OPTIMUM PROGRAM SIZE BASED ON PREVIOUS VARIABLES.
CC          DSIR=DESIRED STUDENT INTEREST RATIO.
CC          SIPT=DESIRED STUDENT INTEREST BASED ON OPTIMUM PROGRAM SIZE.
CC          COMB=PROJECTED RESULTS OF TAB TWO.
CC          SIA=ADJUSTMENT IN STUDENT INTEREST.
C           SM=PROJECTED RESULTS BASED ON PREVIOUS CONSIDERATIONS.
      DO 43 I=1,N
C        PERFORM COMPUTATIONS.
      OPT(I,J)=Q(I,J)/DSRP(I)
      SIPT(I,J)=DSIR(I)*OPT(I,J)
      SIA(I,J)=SIPT(I,J)-COMB(I,J)
      IF(OPT(I,J).GT.COMB(I,J))15,21
 15   SM(I,J)=COMB(I,J)
      GO TO 77
 21   SM(I,J)=OPT(I,J)
C        WRITE OUTPUT.
  77  WRITE 1025,NAME1(I),NAME2(I),Q(I,J),DSRP(I),OPT(I,J),DSIR(I),SIPT(
     +I,J),COMB(I,J),SIA(I,J),SM(I,J)
 1025 FORMAT(1X,A10,A5,3X,F5.0,12X,F5.2,9X,F5.0,8X,F5.2,14X,F5.0,10X,F5.
     +0,10X,F5.0,10X,F5.0)
 43   CONTINUE
      J=J+1
      WRITE 771
 771  FORMAT(1H1)
      IF(J.LE.NN)804,904
 904  RETURN
      END
      SUBROUTINE TAB5(N,NN)
      COMMON /ALL/ NAME1(50),NAME2(50),        FMM(50,5),XX(50,5),
     +COMB(50,5),Q(50,5),SM(50,5),RR(50,5),TSA(50),TADJ(50,5),TS(50),
     +TPSC(50,5),PCOUT(50,5),TPC(50,5),TOT(50,5)
      COMMON/FVE/ FER(50)
C        INTRODUCE TAB FIVE.
      WRITE 759
 759  FORMAT(15X,12HINTRODUCTION,10X,*TAB FIVE USES THE RESULTS OF PREVIOUS
     +OUS TABS TOGETHER WITH EXISTING*/35X,*AVERAGE CLASS SIZES AND STAF
     +F REQUIREMENTS TO ARRIVE AT A*/35X,*PROJECTED NUMBER OF TEACHING P
     +ERSONNEL REQUIRED.*/15X,11HDEFINITIONS,9X,*1. TOTAL COURSE ENROLLM
     +ENT-THE TOTAL NUMBER OF STUDENTS ENROLLED*/35X,*FOR EACH PROGRAM L
     +ISTED.*/35X,*2. AVERAGE CLASS SIZE-AVERAGE,EXPECTED OR MANDATED NU
     +MBER OF*/35X,*STUDENTS IN CLASS OR SECTION.*/35X,*3. CURRENT YEAR
     +TEACHERS AVAILABLE-NUMBER OF TEACHERS*/35X,*AVAILABLE TO TEACH IN
     +A COURSE OR PROGRAM.*/35X,*4. TEACHERS REQUIRED-THE NUMBER OF TEACHERS
     +HERS THAT WILL NEED TO*/35X,*BE ADDED TO TEACH THE PROGRAM AT THE TARGET
     +TARGET ENROLLMENT LEVEL.*/15X,12HCOMPUTATIONS,8X,*COLUMN 4=COLUMN
     +2(RESULTS OF TAB 4)/COLUMN 3*/35X,*COLUMN 6=COLUMN 4-COLUMN 5*//)
      J=1
C        WRITE HEADINGS.
 805  WRITE 227 ,J
 227  FORMAT(65X,8HTAB FIVE//63X,*PLANNING YEAR*,1X,I1//1X,136(1H.)/22X,
     +16HPROJECTED COURSE,12X,5HCLASS,17X,7HTEACHER,
     +        16X,8HTEACHERS,14X,9HPERSONNEL/3X,7HPROGRAM,15X,10HENROLLME
     2NT,15X,4HSIZE,18X,8HREQUIRED,15X,9HAVAILABLE,13X,10HADJUSTMENT/1X,
     +136(1H.)//)
C        VARIABLE LIST-
C           SM=PROJECTED RESULTS OF TAB FOUR.
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C            PER=AVERAGE CLASS SIZE BY PROGRAM.
C            RR=TEACHING STAFF REQUIRED.
C            TSA=TEACHING STAFF AVAILABLE.
C            TADJ=PERSONNEL ADJUSTMENTS.
      DO 41 I=1,N
C        PERFORM COMPUTATIONS.
      RR(I,J)=SM(I,J)/PER(I)
      TADJ(I,J)=RR(I,J)-TSA(I)
C        WRITE OUTPUT.
      WRITE 230,NAME1(I),NAME2(I),SM(I,J),PER(I),RR(I,J),TSA(I),TADJ(I,J
     +)
  230 FORMAT(1X,A10,A5,12X,F4.0,18X,F4.0,19X,F5.1,18X,F5.1,17X,F5.1)
   41 CONTINUE
      J=J+1
      WRITE 532
  532 FORMAT(1H1)
      IF(J.LE.NN)805,905
  905 RETURN
      END
      SUBROUTINE TAB6(N,NN)
      COMMON /ALL/ NAME1(50),NAME2(50),      FMM(50,5),XX(50,5),
     +COMB(50,5),Q(50,5),SM(50,5),RR(50,5),TSA(50),TADJ(50,5),TS(50),
     +TPSC(50,5),PCOUT(50,5),TPC(50,5),TOT(50,5)
      COMMON/SIX/ SC(50),FIF(50),NSC(50)
      REAL NSC
      DIMENSION TSC(50,5),TPCSC(50,5),TNTSC(50,5),PNSC(50,5),
     +PIF(50,5)
C        INTRODUCE TAB SIX.
      WRITE 760
  760 FORMAT(15X,12HINTRODUCTION,10X,*TAB SIX USES THE TEACHING PERSONNEL
     +L REQUIREMENTS FROM TAB FIVE*/35X,*TO PROJECT THE INSTRUCTIONAL ST
     +TAFF COSTS BY PROGRAM. THE METHOD*/35X,*RELIES ON USING CURRENT ESTIMATES
     +TIMATES OF SALARIES AND FRINGE BENEFITS*/35X,*WITH AVERAGE ANTICIP
     +ATED  INCREASES TO THE PROJECTION YEARS.*/15X,11HDEFINITIONS,
     +9X,*1. PER MEMBER TEACHING STAFF COST-THE AVERAGE TOTAL COST OF ONE
     ZE*/35X,*TEACHING STAFF MEMBER. TWO STAFF COSTS ARE  REQUIRED-ONE FOR
     +OR CONTIN-*/35X,*UING STAFF, ONE FOR NEW STAFF.*/35X,*2. INFLATION FACTOR
     +  FACTOR-THE RATE OF INCREASE IN PER MEMBER STAFF*/35X,*COST AND IS
     +  CALCULATED  IN THE SAME WAY AS THE COMPOUND INTEREST*/35X,*FORMULA
     +A.*/
     +15X,12HCOMPUTATIONS,8X,*COLUMN 5=COLUMN 3(FROM TAB 5).COLUMN 4*/35X,
     +X,*COLUMN 7=COLUMN 5.COLUMN 6*/35X,*COLUMN 10=COLUMN 8(FROM TAB 5)
     +.COLUMN 9*/35X,*COLUMN 11=COLUMN 6.COLUMN 10*/35X,*COLUMN 12=COLUM
     +N 7+COLUMN 11*/35X,*IF COLUMN 8 IS LESS THAN 0, COLUMN 10=0*//)
      J=1
C        WRITE HEADINGS.
  806 WRITE 231,J
  231 FORMAT(66X,7HTAB SIX//63X,*PLANNING YEAR*,1X,I1//1X,136(1H.)/72X,
     +5HTOTAL,25X,5HTOTAL,2X,9HPROJECTED,/36X,
     110HCONTINUING,2X,9HTOT. EST.,13X,9HPROJECTED,14X,7HNEW PER,3X,3HNE
     2W,3X,9HTOTAL NEW/13X,9HPROJECTED,2X,10HCONTINUING,2X,10HPER MEMBER
     3,2X,10HCONTINUING,1X,9HINFLATION,2X,10HCONTINUING,2X,9HTOTAL NEW,
     42X,6HMEMBER,3X,5HSTAFF,4X,5HSTAFF,4X,15HPROJECTED TOTAL/3X,7HPROGR
     5AM,5X,5HSTAFF,6X,5HSTAFF,8X,4HCOST,8X,4HCOST,6X,6HFACTOR,3X,10HSTA
     6FF COST,4X,5HSTAFF,5X,4HCOST,4X,4HCOST,5X,4HCOST,7X,10HSTAFF COST/
     +1X,136(1H.)//)
C        VARIABLE LIST-
C            TSA=TEACHING STAFF AVAILABLE.
C            TADJ=ADJUSTMENTS IN PERSONNEL FROM TAB FIVE.
C            RR=NUMBER OF TEACHERS REQUIRED, FROM TAB FIVE.
C            SC=CONTINUING PER MEMBER STAFF COST.
C            TSC=TOTAL CONTINUING STAFF COST.
C            FIF AND PIF=INFLATION FACTORS.
C            TPCSC=PROJECTED CONTINUING STAFF COST.
C            NSC=NEW PER MEMBER STAFF COST.
C            TNTSC=TOTAL NEW STAFF COST.
C            PNSC=PROJECTED NEW STAFF COST.
C            TPSC=TOTAL PROJECTED STAFF COST.
      DO 22 I=1,N
C        PERFORM COMPUTATIONS.
      TSC(I,J)=TSA(I)*SC(I)
      TPCSC(I,J)=(FIF(I)**J)*TSC(I,J)
      TNTSC(I,J)=TADJ(I,J)*NSC(I)
      IF(TNTSC(I,J).LT.0)71,73
   71 TNTSC(I,J)=0
   73 PNSC(I,J)=TNTSC(I,J)*(FIF(I)**J)
      PIF(I,J)=FIF(I)**J
      TPSC(I,J)=PNSC(I,J)+TPCSC(I,J)
C        WRITE OUTPUT.
      WRITE 234,NAME1(I),NAME2(I),RR(I,J),TSA(I),SC(I),TSC(I,J),PIF(I,J)
     +,TPCSC(I,J),TADJ(I,J),NSC(I),TNTSC(I,J),PNSC(I,J),TPSC(I,J)
```

```
  234  FORMAT(1X,A10,A5,F4.1,6X,F4.1,7X,1H$,F6.0,4X,1H$,F7.0,6X,F4.2,5X,
     +1H$,F7.0,4X,F4.1,4X,1H$,F6.0,3X,1H$,F7.0,2X,1H$,F7.0,4X,1H$,F8.0)
  22   CONTINUE
       J=J+1
       WRITE 248
  248  FORMAT(1H1)
       IF(J.LE.NN)806,906
  906  RETURN
       END
       SUBROUTINE TAB7(N,NN)
       COMMON /ALL/ NAME1(50),NAME2(50),          FMM(50,5),XX(50,5),
      +COMB(50,5),Q(50,5),SM(50,5),RR(50,5),TSA(50),TADJ(50,5),TS(50),
      +TPSC(50,5),PCOUT(50,5),TPC(50,5),TOT(50,5)
       COMMON/SVN/ POUT(50),GIF(50)
       DIMENSION TPOUT(50,5),
C         INTRODUCE TAB SEVEN.                   QIF(50,5)
       WRITE 764
  764  FORMAT(15X,12HINTRODUCTION,10X,*TAB SEVEN PROJECTS THE CAPITAL COS
     ZTS BY PROGRAM BASED ON PRESENT*/35X,*ESTIMATES OF CAPITAL COSTS FO
     +R THOSE PROGRAMS PLUS A FIXED*/35X,*INFLATION FACTOR. THE RESULT I
     +S A PROJECTION OF COSTS FOR THE*/35X,*PLANNING YEAR.*/15X,11HDEFIN
     +ITIONS,
     +9X, *1. TRAINING STATION-NUMBER OF PHYSICAL POSITIONS ALLOTED FOR*
     +/35X,*EACH PROGRAM, BASED ON (1) THE NUMBER OF STUDENTS IN EACH PR
     +OGRAM,*/35X,*AND (2) THE NUMBER OF STUDENTS USING EACH STATION.*/35X,*2
     +5X,*2. INFLATION FACTOR-SAME AS IN TAB SIX, THE ONLY DIFFERENCE BEING
     +ING*/35X,*THAT COST INCREASE USED IS THAT FOR CAPITAL EXPENDITURES
     +  INSTEAD*/35X,*OF TEACHING STAFF COST.*/15X,12HCOMPUTATIONS,8X,*COLUMN
     +LUMN 4=COLUMN 2.COLUMN 3*/35X,*COLUMN 6=COLUMN 4.COLUMN 5*//)
       J=1
C         WRITE HEADINGS.
  807  WRITE 277,J
  277  FORMAT(64X,9HTAB SEVEN//63X,*PLANNING YEAR*,1X,I1//1X,136(1H.)//47X
     +,11HPER-STATION/25X,9HNUMBER OF,14X,
     19HESTIMATED,10X,15HTOTAL ESTIMATED,11X,9HINFLATION,11X,15HTOTAL PR
     2OJECTED/3X,7HPROGRAM,11X,17HTRAINING STATIONS,8X,14HCAPITAL OUTLAY,
     2,7X,14HCAPITAL OUTLAY,13X,6HFACTOR,13X,14HCAPITAL OUTLAY/1X,136(1H
     +.)///)
C         VARIABLE LIST-
CCC           TS=NUMBER OF TRAINING STATIONS PER PROGRAM
CCC           POUT=PER-STATION ESTIMATED CAPITAL OUTLAY.
CCC           TPOUT=TOTAL ESTIMATED CAPITAL OUTLAY BY PROGRAM.
C             GIF AND QIF=INFLATION FACTORS.
              PCOUT=TOTAL PROJECTED CAPITAL OUTLAY.
       DO 1 I=1,N
C         PERFORM COMPUTATIONS.
       TPOUT(I,J)=TS(I)*POUT(I)
       QIF(I,J)=GIF(I)**J
       PCOUT(I,J)=TPOUT(I,J)*QIF(I,J)
C         WRITE OUTPUT.
       WRITE 14,NAME1(I),NAME2(I),TS(I),POUT(I),TPOUT(I,J),QIF(I,J),PCOUT
     +(I,J)
   14  FORMAT(1X,A10,A5,11X,F4.0,16X,1H$,F7.2,14X,1H$,F9.2,15X,F5.2,16X,1H$,
     +1H$,F9.2)
    1  CONTINUE
       J=J+1
       WRITE 427
  427  FORMAT(1H1)
       IF(J.LE.NN)807,907
  907  RETURN
       END
       SUBROUTINE TAB8(N,NN)
       COMMON /ALL/ NAME1(50),NAME2(50),          FMM(50,5),XX(50,5),
      +COMB(50,5),Q(50,5),SM(50,5),RR(50,5),TSA(50),TADJ(50,5),TS(50),
      +TPSC(50,5),PCOUT(50,5),TPC(50,5),TOT(50,5)
       COMMON/EGHT/ TCC(50),QIF(50)
       DIMENSION  PSC(50,5),
C         INTRODUCE TAB EIGHT.                   ZIF(50,5)
       WRITE 766
  766  FORMAT(15X,12HINTRODUCTION,10X,*TAB EIGHT PROJECTS THE COST OF CONSUMABLES
     +SMABLES FOR EACH PROGRAM BASED*/35X,*ON THE PRESENT COST FOR THAT OR
     +OR AN EQUIVALENT PROGRAM. A COST*/35X,*INCREASE FACTOR BASED ON COST
     +ST INCREASES OF PREVIOUS YEARS IS*/35X,*THEN APPLIED TO THE CURRENT
     +T FIGURE TO OBTAIN AN ESTIMATE OF*/35X,*FUTURE COSTS.*/15X,11HDEFINITIONS
     +NITIONS,
     +9X,  *1. TRAINING STATION-THE SAME FIGURE USED IN TAB SEVEN.*/35X,
     +*2. INFLATION FACTOR-SAME AS IN TABS SIX AND SEVEN, WITH THE*/35X,
     +*EXCEPTION THAT THE INFLATION RATE USED IS THAT FOR CONSUMABLES*/3
     Z5X,*RATHER THAN INSTRUCTION OR CAPITA. COST.*/15X,12HCOMPUTATIONS,
     +8X,*COLUMN 4=COLUMN 2.COLUMN 3*/35X,*COLUMN 6=COLUMN 4.COLUMN 5*/3
     +5X,*COLUMN 7=TOTAL PROJECTED OVERALL COSTS OF TABS 6,7, AND 8*//)
```

```
      J=1
C        WRITE HEADINGS.
  808 WRITE 242,J
  242 FORMAT(64X,9HTAB EIGHT//61X,*PLANNING YEAR*,1X,I1//1X,136(1H.)/25X
     +,9HNUMBER OF,8X,21HESTIMATED PER-STATION,
     +  5X,15HTOTAL ESTIMATED, 4X,9HINFLATION, 4X,15HTOTAL PROJECTED,4X,
     +15HTOTAL PROJECTED,/3X,7HPROGRAM,11X,17HTRAINING STATIONS,3X,11HCO
     +NSUMABLES,12X,11HCONSUMABLES,7X,6HFACTOR,6X,16HCONSUMABLES COST,
     +4X,12HOVERALL COST/1X,136(1H.)//)
C        VARIABLE LIST-
C           TS=NUMBER OF TRAINING STATIONS PER PROGRAM.
C           TCC=ESTIMATED PER-STATION CONSUMABLES.
C           PSC=TOTAL ESTIMATED CONSUMABLES.
C           HIF AND ZIF=INFLATION FACTORS.
C           TPC=TOTAL PROJECTED CONSUMABLES COST.
C           TOT=TOTAL PROJECTED OVERALL STAFF, CAPITAL, AND CONSUMABLES COST.
      DO 2 I=1,N
C        PERFORM COMPUTATIONS.
      PSC(I,J)=TS(I)*TCC(I)
      ZIF(I,J)=HIF(I)**J
      TPC(I,J)=PSC(I,J)*ZIF(I,J)
      TOT(I,J)=TPSC(I,J)+PCOUT(I,J)+TPC(I,J)
C        WRITE OUTPUT.
      WRITE 244,NAME1(I),NAME2(I),TS(I),TCC(I),PSC(I,J),ZIF(I,J),TPC(I,J
     +),TOT(I,J)
  244 FORMAT(1X,A10,A5,10X,F4.0,17X,1H$,F7.2,14X,1H$,F9.2,9X,F5.2,8X,1H$
     +,F9.2,9X,1H$,F10.2)
    2 CONTINUE
      J=J+1
      WRITE 428
  428 FORMAT(1H1)
      IF(J.LE.NN)808,908
  908 RETURN
      END

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SAMPLE FIVE YEAR PROJECTION

A brief explanation of the sample output is necessary not only to further familiarize the user with the methods employed in the computer program but also to allow a better understanding of the ways in which many of the variables interact.

Nine standard vocational education programs were used in the projections. The computer program presently has storage capabilities to run projections for fifty vocational education programs, but can be altered easily to accommodate more.

The tables and graphs in Tab One indicate that future enrollments for the Middle City School District will continue to decline as they have in the past. More specifically, projected eleventh and twelfth grade enrollments, or the available pool for vocational educational programs, also show slight declines. These figures are critical variables in Tab Two.

Method Two of Tab Two computes an attrition rate, or the percentage decrease or increase between past expressed interest and actual past enrollments in a particular program. This figure is then multiplied by current student interest to arrive at a projected program enrollment figure for planning year one. For each successive planning year, the ratio between current student interest and projected eleventh and twelfth grade enrollments of planning year one is computed and then multipled by the estimated high school enrollment of that particular planning year

to project program enrollment. For instance, consider Small Engine Repair in planning year three:

(Current student interest/projected high school enrollments,) X
planning year one
(Projected high school enrollments, planning year three) =
Projected program enrollment, planning year three.

or

$$(45/2857) \cdot 2756 = .0158 \cdot 2756 \doteq 43$$

Hence, program enrollments derived by this method are directly related to projected enrollments found in Method One of Tab One. In this case, enrollments in vocational educational programs are anticipated to drop slightly as a result.

Method Four of Tab Two computes an enrollment percentage, or the ratio between average past program enrollment and average past eleventh and twelfth grade enrollments. This percentage is then multiplied by the estimated high school enrollment to project program enrollments. The enrollment percentage is held constant through each succeeding planning year and multiplied by predicted high school enrollments for that year to arrive at a projected number of students. As in Method Two, the projected results are directly proportional to these estimated high school enrollments. In this case too, program enrollments are expected to dip slightly.

The final phase in Tab Two, the combination of methods, represents a composite of the two previous methods. The administrator's input is required through the attachment of a weighted mean to previous results, with the provision that one method can be assigned more importance than the other. Since both methods two and four forecast declines in program enrollments, the combination of methods also predicts a general downward trend.

The key variables in Tab Three are past and projected job demand. (The reader is urged to consult the appendix of this booklet for information concerning the derivation of projected job demand data input by vocational education program.) A placement factor is derived by comparing past average job placement to past average job demand for a particular program. This figure is then multiplied by projected job demand to arrive at an estimate for skill-related placement. Thus, the projected results in this method fluctuate with projected job demand. In the sample output, for example, Small Engine Repair's estimated skill-related placements through the years show an upward trend because of an optimistic job outlook. The forecasts for general merchandizing, however, are quite bleak because of falling projected demand.

The objective of Tab Four is to use the results of the previous tabs to create a single projection for each program. A weighting

system, based on the importance that the local education agency places on job demand (Tab Three) and student enrollment (Tab Two) is employed to achieve these results. As an illustration, consider Welding in planning year one. A projected skill-related placement of sixty-three students from Tab Three is divided by .75, or the desired skill-related placement ratio (DSRP). DSRP indicates the percentage of the class the district expects to find employment in their field upon graduating. This division yields an optimum program size based on the preceding two factors, in this case forty-nine. Optimum program size is then multiplied by the desired student interest ratio (1.10), an indicator of the amount of student interest wished for by the district for each training position available, to determine desired student interest based on optimum program size (93). Projected enrollment from Tab Two (110) is subtracted from this amount to arrive at adjustment in student interest (-18). Since a negative number appears in this column, some student interest should be directed to other programs. In the case that student interest adjustment is positive, the district should encourage student interest in that program. The final step in Tab Four is to compare projected enrollments from Tab Two to optimum program size; the smaller figure (112) is then chosen as the final enrollment forecast. In this instance, a poor job outlook in welding effectively warns against possible overenrollment in that program.

Tab Five uses the projected course enrollment figures from Tab Four and from these estimates determines the number of required teaching personnel. For example, Small Engine Repair in planning year one forecasts a program enrollment of forty-five students and an average class size of twenty-one. The ratio of these two figures determines the number of teachers required, in this case 2.2. The number of available teachers, 1.5, is then subtracted from this figure to arrive at personnel adjustment, or +.7. It should be noted that personnel adjustment will most likely be negative when projected course enrollment is lower than present enrollment.

Using the teaching personnel requirements derived in Tab Five, Tab Six computes instructional staff costs based on new staff requirements and an inflation factor. To illustrate, Electronics in planning year three forecasts continuing staff costs of about $160,000 and new staff costs of about $4,000 to determine a total staff cost of about $164,000. In the case where projected staff is less than present continuing staff, projected new staff costs are simply zero.

Tabs Seven and Eight are almost identical in methodology. In Tab Seven capital costs are projected on the basis of present capital cost estimates plus a fixed inflation factor. Tab Eight predicts consumables costs based on per station consumables expenses and a prescribed inflation rate. In both cases, the inflation figure increases exponentially throughout the planning years to account for rising costs.

For instance, in planning year one of Tab Seven, Food Management with thirty-five training stations, an estimated capital outlay of $1340 per station, and an inflation rate of five percent, forecasts a total projected outlay of almost $50,000. Following the same program and a similar method through planning year one of Tab Eight, projected consumables costs are $3,570.00. This tab also includes total projected overall costs, or the summation of staff, capital and consumables cost.

The purpose of this sample output, then, was to take a hypothetical school district through the projection methods provided by the tabs. More specifically, it gives the administrator a clearer understanding of the roles that student interest, projected high school enrollments, labor market demands, professional judgment, teaching staff requirements, and program expenses play in vocational education planning.

TAB ONE

INTRODUCTION

TAB ONE IS CALLED THE COHORT SURVIVAL METHOD. IT IS DESIGNED TO ESTIMATE STUDENT ENROLLMENT, GRADES K THROUGH 12, OVER THE NEXT FIVE YEARS. THE COHORT SURVIVAL METHOD INVOLVES CALCULATING THE RATE AT WHICH THE NUMBER OF STUDENTS CHANGES AS THAT AGE GROUP MOVES THROUGH THE GRADES. THE PROJECTED ENROLLMENTS OF 11TH AND 12TH GRADES, OR THOSE STUDENTS AVAILABLE FOR VOCATIONAL EDUCATION PROGRAMS, IN METHOD ONE ARE USED IN TAB TWO

DEFINITIONS

1. SURVIVAL RATE-THE PERCENTAGE OF STUDENTS MOVING FROM ONE GRADE TO THE NEXT EACH YEAR.
2. AVERAGE SURVIVAL RATIO-THE AVERAGE OF SURVIVAL RATES FOR EACH GRADE ACROSS A NUMBER OF YEARS. THIS IS USED TO ESTIMATE FUTURE SURVIVAL FROM ONE GRADE TO THE NEXT.

MIDDLE CITY 1977

BIRTHS FOR THE COUNTY

YEAR	BIRTHS
1966	4039.
1967	4085.
1968	4240.
1969	4464.
1970	4540.
1971	4189.
1972	3747.
1973	3723.
1974	3650.
1975	3443.
1976	3408.

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TABLE 1 ACTUAL ENROLLMENTS

GRADE	71 - 72	72 - 73	73 - 74	74 - 75	75 - 76	76 - 77
K	1515.	1603.	1583.	1553.	1534.	1320.
		39.24.	37.33.	34.92.	33.73.	31.51.
1	1478.	1447.	1535.	1498.	1542.	1526.
		95.51.	95.76.	94.63.	98.91.	99.48.
2	1574.	1443.	1365.	1435.	1393.	1472.
		97.63.	94.33.	95.81.	92.99.	95.46.
3	1600.	1551.	1338.	1283.	1408.	1373.
		98.54.	92.72.	93.99.	94.21.	98.56.
4	1581.	1552.	1480.	1334.	1234.	1326.
		97.88.	95.42.	111.28.	96.18.	94.71.
5	1605.	1547.	1506.	1461.	1298.	1227.
		97.85.	97.04.	97.36.	95.27.	99.43.
6	1565.	1564.	1501.	1497.	1391.	1263.
		97.45.	97.03.	99.74.	96.53.	97.91.
7	1482.	1455.	1494.	1443.	1488.	1367.
		93.67.	95.52.	95.14.	94.15.	98.27.
8	1516.	1459.	1436.	1498.	1421.	1375.
		99.85.	97.95.	99.58.4	98.48.	98.21.
9	1474.	1517.	1434.	1458.	1501.	1477.
		100.87.	97.68.	102.23.	100.87.	103.94.
10	1478.	1507.	1509.	1439.	1490.	1529.
		102.24.	99.47.	100.35.	101.50.	101.87.
11	1341.	1436.	1456.	1522.	1386.	1433.
		97.69.	96.62.	100.86.	96.32.	95.17.
12	1269.	1313.	1370.	1391.	1359.	1351.
		97.91.	95.48.	94.95.	91.26.	97.47.

SUMMARY TABLES

K-6	10919.	10707.	10308.	10139.	9784.	9507.
7-10	5942.	5958.	5873.	5838.	5812.	5768.
11-12	2609.	2749.	2826.	2913.	2775.	2784.
K-12	19469.	19414.	19007.	18869.	18371.	18039.

ASSUMPTIONS FOR ALL PROJECTIONS

1. PROJECTIONS IMPROVE AS THE SIZE OF THE SCHOOL DISTRICT INCREASES.

2. THESE PROJECTIONS ASSUME NO UNUSUAL CHANGES IN THE CHARACTERISTICS OF THE SCHOOL DISTRICT SUCH AS BOUNDARY CHANGES OR CLOSURES OF A PRIVATE EDUCATIONAL FACILITY IN THE AREA.

3. FOUR DIFFERENT METHODS OF PROJECTION HAVE BEEN USED. ASSUMPTIONS ASSOCIATED WITH EACH METHOD WILL BE PROVIDED.

PLEASE CHECK TABLE 1 CAREFULLY WITH YOUR RECORDS. MISTAKES IN THE DATA WILL GREATLY AFFECT THE ACCURACY OF THE PROJECTIONS.

MIDDLE CITY 1977

TABLE 2 ENROLLMENTS PROJECTED USING METHOD 1

GRADE	77 - 78	78 - 79	79 - 80	80 - 81	81 - 82
K	1323. 35.30.	1314. 35.30.	1299. 35.30.	1215. 35.30.	1280. 35.30.
1	1278. 96.84.	1281. 96.84.	1273. 35.84.	1268. 96.84.	1177. 96.84.
2	1457. 95.45.	1228. 95.45.	1223. 35.45.	1215. 95.45.	1191. 95.45.
3	1408. 95.65.	1393. 95.65.	1157. 35.65.	1178. 95.65.	1152. 95.65.
4	1338. 96.85.	1364. 96.85.	1363. 35.85.	1138. 96.85.	1133. 96.85.
5	1291. 97.36.	1295. 97.36.	1328. 37.36.	1314. 97.36.	1181. 97.36.
6	1197. 97.52.	1259. 97.52.	1253. 37.52.	1295. 97.52.	1281. 97.52.
7	1206. 35.50.	1143. 95.50.	1212. 35.50.	1206. 95.50.	1236. 95.50.
8	1349. 98.67.	1198. 98.67.	1128. 98.67.	1186. 98.67.	1130. 95.67.
9	1388. 100.93.	1361. 100.93.	1231. 100.93.	1138. 100.93.	1197. 100.93.
10	1493. 101.08.	1403. 101.08.	1375. 101.08.	1214. 101.08.	1150. 101.08.
11	1491. 97.55.	1456. 97.55.	1358. 37.55.	1362. 97.55.	1334. 97.55.
12	1365. 95.28.	1421. 95.28.	1333. 35.28.	1304. 95.28.	1279. 95.28.

SUMMARY TABLES

K- 6	9283.	9126.	8831.	8586.	8245.
7-10	5436.	5097.	4917.	4744.	4771.
11-12	2857.	2877.	2735.	2646.	2463.
K-12	17576.	17100.	16554.	15977.	15482.

ASSUMPTIONS FOR PROJECTION METHOD 1

PROJECTIONS ARE BASED ON THE LAST FIVE YEARS SURVIVAL RATE.

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TABLE 3 ENROLLMENTS PROJECTED USING METHOD 2

GRADE	77 - 78	78 - 79	79 - 80	80 - 81	81 - 82
K	1181. 31.51.	1173. 31.51.	1153. 31.51.	1085. 31.51.	1071. 31.51.
1	1313. 99.48.	1175. 99.48.	1167. 99.48.	1144. 99.48.	1075. 99.48.
2	1457. 95.46.	1254. 95.46.	1121. 95.46.	1114. 95.46.	1092. 95.46.
3	1451. 98.56.	1436. 98.56.	1236. 98.56.	1105. 98.56.	1098. 98.56.
4	1380. 94.71.	1374. 94.71.	1360. 94.71.	1170. 94.71.	1047. 94.71.
5	1318. 99.43.	1293. 99.43.	1366. 99.43.	1352. 99.43.	1164. 99.43.
6	1281. 97.91.	1291. 97.91.	1256. 97.91.	1338. 97.91.	1324. 97.91.
7	1241. 98.27.	1181. 98.27.	1233. 98.27.	1244. 98.27.	1315. 98.27.
8	1343. 95.21.	1219. 98.21.	1150. 95.21.	1246. 98.21.	1222. 94.21.
9	1429. 103.94.	1395. 103.94.	1297. 103.94.	1285. 103.94.	1295. 103.94.
10	1505. 101.87.	1456. 101.87.	1422. 101.87.	1291. 101.87.	1228. 101.87.
11	1471. 96.17.	1447. 96.17.	1413. 96.17.	1367. 96.17.	1241. 96.17.
12	1397. 97.47.	1433. 97.47.	1410. 97.47.	1365. 97.47.	1333. 97.47.

SUMMARY TABLES

<- 6	9222.	9395.	8666.	8308.	7875.
7-10	5518.	5251.	5117.	4946.	5059.
11-12	2867.	2880.	2811.	2732.	2574.
K-12	17607.	17127.	16594.	16026.	15508.

ASSUMPTIONS FOR PROJECTION METHOD 2

PROJECTIONS ARE BASED ON THE LAST YEARS SURVIVAL RATE.

MIDDLE CITY 1977

TABLE 4 ENROLLMENTS PROJECTED USING METHOD 3

GRADE	77 - 78	78 - 79	79 - 80	80 - 81	81 - 82
K	1118. 29.63.	1032. 27.72.	942. 25.52.	823. 23.91.	748. 22.88.
1	1322. 100.19.	1125. 101.29.	1037. 102.68.	975. 103.51.	861. 104.62.
2	1438. 93.74.	1232. 93.17.	1041. 92.68.	973. 92.03.	892. 91.46.
3	1414. 96.87.	1376. 96.22.	1197. 95.38.	1005. 96.53.	940. 96.68.
4	1313. 95.76.	1349. 95.38.	1313. 95.00.	1124. 94.61.	947. 94.23.
5	1297. 97.81.	1288. 97.95.	1323. 98.09.	1284. 98.23.	1105. 98.37.
6	1198. 97.65.	1267. 97.70.	1233. 97.74.	1294. 97.79.	1257. 97.83.
7	1236. 97.90.	1182. 98.68.	1253. 99.46.	1262. 100.25.	1307. 101.03.
8	1344. 98.31.	1214. 98.20.	1150. 98.08.	1235. 97.96.	1235. 97.85.
9	1433. 134.24.	1416. 105.33.	1292. 135.43.	1247. 107.52.	1341. 109.62.
10	1499. 101.47.	1456. 101.60.	1440. 101.72.	1316. 101.85.	1272. 101.98.
11	1475. 95.53.	1442. 96.20.	1396. 95.87.	1376. 95.54.	1253. 95.20.
12	1363. 93.83.	1378. 93.37.	1333. 92.87.	1230. 92.37.	1264. 91.87.

SUMMARY TABLES

K-6	9037.	8569.	8117.	7478.	6751.
7-10	5512.	5268.	5132.	5060.	5155.
11-12	2821.	2820.	2715.	2665.	2517.
K-12	17421.	16757.	16005.	15203.	14422.

ASSUMPTIONS FOR PROJECTION METHOD 3

PROJECTIONS ARE BASED ON A LINEAR TREND ACROSS EACH GRADE.

MIDDLE CITY 1977

TABLE 5 ENROLLMENTS PROJECTED USING METHOD 4

GRADE	77 - 78	78 - 79	79 - 80	80 - 81	81 - 82
K	1252. 33.41.	1244. 33.41.	1213. 33.41.	1158. 33.41.	1136. 33.41.
1	1236. 98.16.	1228. 98.16.	1221. 98.16.	1196. 98.16.	1128. 98.16.
2	1457. 95.46.	1237. 95.46.	1172. 95.46.	1164. 95.46.	1142. 95.46.
3	1429. 97.11.	1415. 97.11.	1221. 97.11.	1137. 97.11.	1130. 97.11.
4	1313. 95.78.	1369. 95.78.	1355. 95.78.	1150. 95.78.	1090. 95.78.
5	1305. 98.48.	1294. 98.48.	1347. 98.48.	1333. 98.48.	1132. 98.48.
6	1199. 97.72.	1275. 97.72.	1254. 97.72.	1316. 97.72.	1303. 97.72.
7	1224. 96.89.	1162. 96.89.	1233. 96.89.	1225. 96.89.	1276. 96.89.
8	1346. 98.44.	1205. 98.44.	1144. 98.44.	1216. 98.44.	1206. 98.44.
9	1408. 102.43.	1378. 102.43.	1234. 102.43.	1172. 102.43.	1246. 102.43.
10	1499. 101.47.	1429. 101.47.	1339. 101.47.	1252. 101.47.	1189. 101.47.
11	1481. 96.86.	1452. 96.86.	1354. 96.86.	1355. 96.86.	1213. 96.86.
12	1381. 96.38.	1427. 96.38.	1339. 96.38.	1314. 96.38.	1306. 96.38.

SUMMARY TABLES

K-6	9252.	9061.	8773.	8447.	8060.
7-10	5477.	5174.	5012.	4865.	4917.
11-12	2862.	2879.	2733.	2669.	2519.
K-12	17591.	17113.	16574.	16002.	15495.

ASSUMPTIONS FOR PROJECTION METHOD 4

1. THESE PROJECTIONS ARE THE AVERAGE OF THE PROJECTIONS FOUND IN TABLES 2 AND 3.
2. THIS METHOD WILL MINIMIZE EXTREMES FOUND IN TABLES 2, AND 3.

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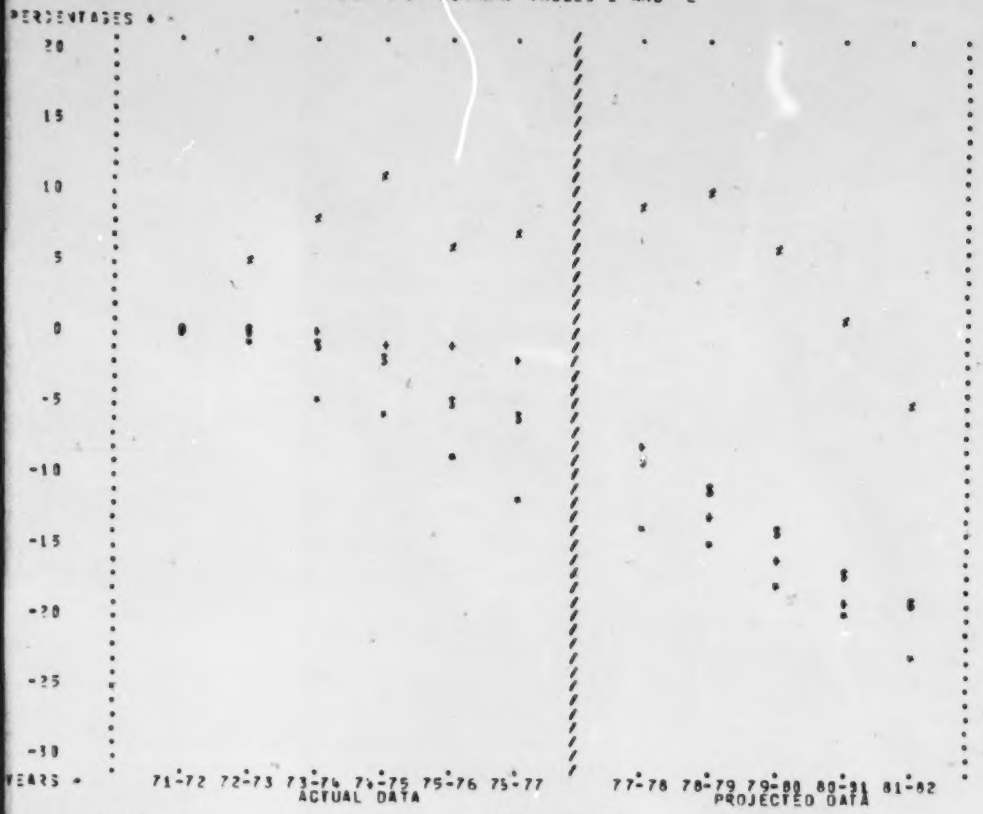
MIDDLE CITY 1977

GRAPH OF SUMMARY TABLES 1 AND 2



LEGEND

THE SYMBOL FOR K- 6 IS *

THE SYMBOL FOR 7-10 IS +

THE SYMBOL FOR 11-12 IS #

THE SYMBOL FOR K-12 IS 8

ASSUMPTIONS

A. THE YEAR 71-72 IS THE BASE.

B. EACH YEARS ENROLLMENT IS COMPARED TO THE BASE.

C. ANY PERCENTAGES THAT ARE GREATER THAN A 20 PERCENT INCREASE APPEAR AT THE TOP OF THE GRAPH.

D. ANY PERCENTAGES LESS THAN A 30 PERCENT DECREASE APPEAR AT THE BOTTOM OF THE GRAPH.

MIDDLE CITY 1977

GRAPH OF SUMMARY TABLES 1 AND 3

LEGEND

THE SYMBOL FOR K- 6 IS *

THE SYMBOL FOR 7-10 IS +

THE SYMBOL FOR 11-12 IS #

THE SYMBOL FOR K-12 IS $

ASSUMPTIONS

A. THE YEAR 71-72 IS THE BASE.

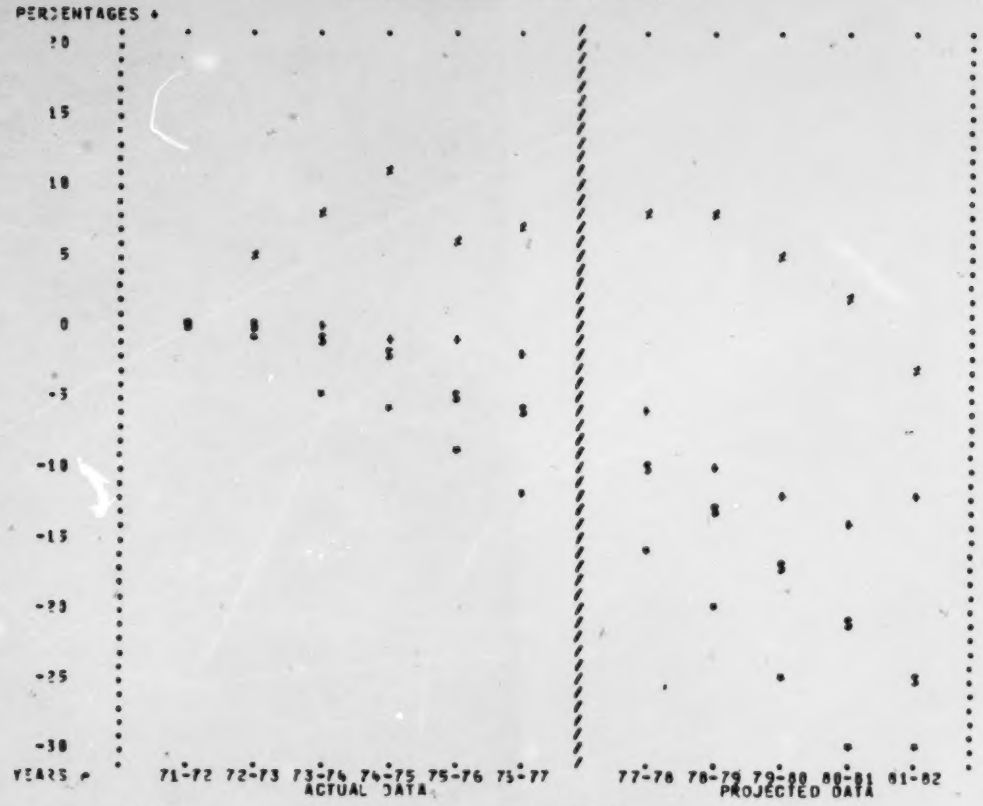
B. EACH YEARS ENROLLMENT IS COMPARED TO THE BASE.

C. ANY PERCENTAGES THAT ARE GREATER THAN A 20 PERCENT INCREASE APPEAR AT THE TOP OF THE GRAPH.

D. ANY PERCENTAGES LESS THAN A 30 PERCENT DECREASE APPEAR AT THE BOTTOM OF THE GRAPH.

MIDDLE CITY 1977

GRAPH OF SUMMARY TABLES 1 AND 4



LEGEND

THE SYMBOL FOR <- 6 IS *

THE SYMBOL FOR 7-10 IS +

THE SYMBOL FOR 11-12 IS #

THE SYMBOL FOR K-12 IS $

ASSUMPTIONS

A. THE YEAR 71-72 IS THE BASE.

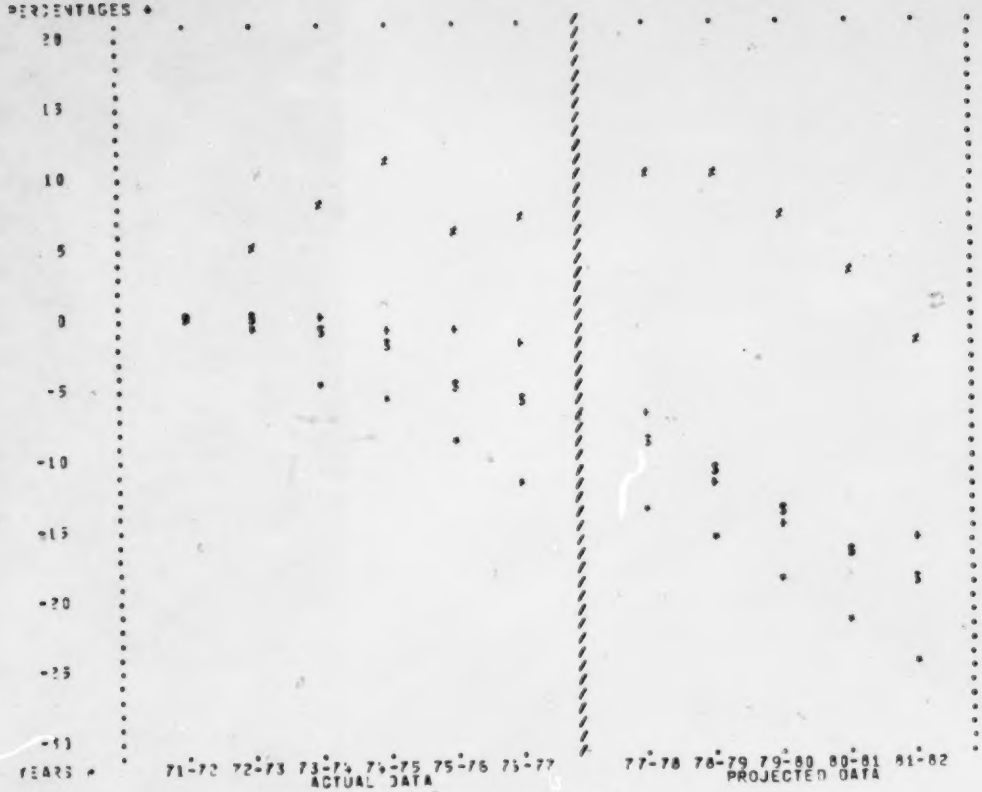
B. EACH YEARS ENROLLMENT IS COMPARED TO THE BASE.

C. ANY PERCENTILES THAT ARE GREATER THAN A 20 PERCENT INCREASE APPEAR AT THE TOP OF THE GRAPH.

D. ANY PERCENTILES LESS THAN A 30 PERCENT DECREASE APPEAR AT THE BOTTOM OF THE GRAPH.

MIDDLE CITY 1977

GRAPH OF SUMMARY TABLES 1 AND 5



LEGEND

THE SYMBOL FOR <- 6 IS >

THE SYMBOL FOR 7-10 IS +

THE SYMBOL FOR 11-12 IS #

THE SYMBOL FOR >-12 IS $

ASSUMPTIONS

A. THE YEAR 71-72 IS THE BASE.

B. EACH YEARS ENROLLMENT IS COMPARED TO THE BASE.

C. ANY PERCENTAGES THAT ARE GREATER THAN A 20 PERCENT INCREASE APPEAR AT THE TOP OF THE GRAPH.

D. ANY PERCENTAGES LESS THAN A 30 PERCENT DECREASE APPEAR AT THE BOTTOM OF THE GRAPH.

INTRODUCTION

METHOD TWO OF TAB TWO USES THE RESULTS OF STUDENT INTEREST SURVEYS AND TESTS TOGETHER WITH ACTUAL ENROLLMENTS IN PROGRAMS TO PROJECT FUTURE ENROLLMENT IN VOCATIONAL PROGRAMS.

DEFINITIONS

1. AVERAGE PAST INTEREST TEST-AVERAGE NUMBER OF STUDENTS WHO EXPRESSED INTEREST IN A PARTICULAR OCCUPATION.
2. ACTUAL AVERAGE TEST CLASS ENROLLMENT-THE ACTUAL ENROLLMENT IN EACH PROGRAM (CORRESPONDING TO THE OCCUPATION WHICH THE STUDENT EXPRESSED INTEREST IN) OF THE TEST CLASS.
3. ATTRITION RATE-PERCENTAGE DECREASE (OR INCREASE) BETWEEN THE EXPRESSED INTEREST AND THE ACTUAL INTEREST AS EXPRESSED BY ENROLLMENT.

COMPUTATIONS

COLUMN 4=COLUMN 3/COLUMN 2
COLUMN 6=COLUMN 4.COLUMN 5

TAB TWO

METHOD TWO

PLANNING YEAR 1

PROGRAM	AVERAGE PAST INTEREST TEST	AVERAGE TEST CLASS ENROLLMENT	ATTRITION RATE	CURRENT INTEREST TEST	PROJECTED STUDENT INTEREST
STAFF ENG	48.	47.	.966	45.	43.
ELECTRONICS	232.	226.	.974	250.	244.
DRAFTING	65.	60.	.923	60.	55.
WELDING	113.	113.	.996	105.	104.
AUTO MECHANICS	272.	272.	1.002	235.	236.
OFFICE STENO	402.	399.	.991	425.	421.
FOOD MGT	122.	112.	.913	141.	129.
NURSE AIDE	379.	371.	.987	453.	446.
DEN HEALTH	356.	360.	1.003	337.	338.

TAB TWO

METHOD TWO

PLANNING YEAR 2

PROGRAM	AVERAGE PAST INTEREST TEST	AVERAGE TEST CLASS ENROLLMENT	ATTRITION RATE	CURRENT INTEREST TEST	PROJECTED STUDENT INTEREST
SMALL ENG	48.	47.	.963	45.	45.
ELECTRONICS	232.	226.	.974	250.	252.
AUTOMOTIVE	55.	60.	.923	50.	60.
WELDING	113.	113.	.996	105.	106.
AUTO BODY	272.	272.	1.002	235.	237.
LEGAL STENO	402.	399.	.991	425.	428.
FOOD MGT	122.	112.	.915	141.	142.
NURSE AIDE	579.	571.	.987	553.	557.
SEW MERCH	336.	360.	1.003	337.	339.

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TAB TWO

METHOD TWO

PLANNING YEAR 3

PROGRAM	AVERAGE PAST INTEREST TEST	AVERAGE TEST CLASS ENROLLMENT	ATTRITION RATE	CURRENT INTEREST TEST	PROJECTED STUDENT INTEREST
BAS. ENG	49.	47.	.966	45.	43.
ELECTRONICS	232.	226.	.974	250.	241.
JOURNALISM	55.	60.	.923	50.	56.
WELDING	112.	113.	.994	105.	101.
AUTO. BODY	272.	272.	1.002	235.	227.
TEXTILES	402.	396.	.991	425.	410.
FOOD MKT	122.	112.	.913	141.	136.
NURSE AIDE	579.	571.	.907	553.	533.
GEN RESRCH	356.	368.	1.089	337.	325.

TAB TWO

METHOD TWO

PLANNING YEAR 4

PROGRAM	AVERAGE PAST INTEREST TEST	AVERAGE TEST CLASS ENROLLMENT	ATTRITION RATE	CURRENT INTEREST TEST	PROJECTED STUDENT INTEREST
SMALL ENG	48.	47.	.965	45.	42.
ELECTRONICS	232.	226.	.974	250.	232.
DIESEL TALK	58.	60.	.923	58.	56.
WELDING	113.	113.	.994	105.	97.
AUTO BODY	272.	272.	1.002	235.	218.
CLERK STENO	402.	399.	.991	425.	394.
FOOD SVC	122.	112.	.918	141.	131.
NURSE AIDE	579.	571.	.987	553.	512.
SEC SECRY	356.	360.	1.009	337.	312.

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TAB TWO

METHOD TWO

PLANNING YEAR 5

PROGRAM	AVERAGE PAST INTEREST TEST	AVERAGE TEST CLASS ENROLLMENT	ATTRITION RATE	CURRENT INTEREST TEST	PROJECTED STUDENT INTEREST
[illegible] ENG	98.	47.	.965	45.	19.
ELECTRONICS	232.	226.	.971	250.	216.
CUSTODIALK	55.	60.	.923	50.	52.
MILLING	113.	113.	.994	185.	91.
AUTO ISSUDY	272.	272.	1.007	235.	211.
[illegible] STENO	482.	399.	.991	425.	203.
[illegible] MGT	179.	112.	.913	141.	36.
NURSE AIDE	579.	571.	.987	553.	129.
[illegible] MERCH	356.	360.	1.089	337.	477.
					291.

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INTRODUCTION — METHOD FOUR RELIES ON HISTORICAL PATTERNS OF ENROLLMENT BY PROGRAM IN COMBINATION WITH A PROJECTION OF TOTAL NUMBERS OF STUDENTS FROM TAB ONE.

COMPUTATIONS
COLUMN 4=COLUMN 2/COLUMN 3
COLUMN 6=COLUMN 4.COLUMN 5

TAB TWO

METHOD FOUR

PLANNING YEAR 1

PROGRAM	AVERAGE PAST PROGRAM ENROLLMENT	AVERAGE PAST TOTAL ENROLLMENT	ENROLLMENT PERCENTAGE	PROJECTED TOTAL ENROLLMENT	PROJECTED PROGRAM ENROLLMENT
SMALL ENG	47.	2021.	.017	2057.	47.
ELECTRONICS	226.	2021.	.080	2057.	229.
SECRETARIAL	58.	2021.	.021	2057.	61.
WELDING	113.	2021.	.056	2057.	114.
AUTO BODY	272.	2021.	.097	2057.	276.
CLERK STENO	399.	2021.	.141	2057.	404.
PASTRY CHEF	112.	2021.	.040	2057.	113.
NURSE AIDE	571.	2021.	.202	2057.	577.
GEN MERCH	368.	2021.	.129	2057.	364.

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TAB TWO

METHOD FOUR

PLANNING YEAR 2

PROGRAM	AVERAGE PAST PROGRAM ENROLLMENT	AVERAGE PAST TOTAL ENROLLMENT	ENROLLMENT PERCENTAGE	PROJECTED TOTAL ENROLLMENT	PROJECTED PROGRAM ENROLLMENT
SMALL ENG	47.	2805.	.017	2877.	48.
ELECTRONICS	226.	2805.	.080	2877.	231.
JOURNALIS	60.	2805.	.021	2877.	61.
WELDING	113.	2805.	.040	2877.	115.
AUTO BODY	272.	2805.	.097	2877.	279.
CLERK STENO	399.	2805.	.141	2877.	407.
FOOD MGT	112.	2805.	.040	2877.	114.
NURSE AIDE	571.	2805.	.202	2877.	582.
DEN HERCH	350.	2805.	.128	2877.	367.

TAB TWO

METHOD FOUR

PLANNING YEAR 3

PROGRAM	AVERAGE PAST PROGRAM ENROLLMENT	AVERAGE PAST TOTAL ENROLLMENT	ENROLLMENT PERCENTAGE	PROJECTED TOTAL ENROLLMENT	PROJECTED PROGRAM ENROLLMENT
[illegible] ENG	47.	2039.	.017	2756.	46.
ELECTRONICS	226.	2039.	.080	2756.	221.
CUSTODIALK	60.	2039.	.021	2756.	59.
WELDING	113.	2039.	.040	2756.	110.
AUTO ISBODY	272.	2039.	.097	2756.	266.
[illegible] STEMO	399.	2039.	.141	2756.	390.
[illegible] MGT	112.	2039.	.040	2756.	109.
NURSE AIDE	571.	2039.	.202	2756.	556.
DEN HERCH	358.	2039.	.129	2756.	351.

TAB TWO

METHOD FOUR

PLANNING YEAR 4

PROGRAM	AVERAGE PAST PROGRAM ENROLLMENT	AVERAGE PAST TOTAL ENROLLMENT	ENROLLMENT PERCENTAGE	PROJECTED TOTAL ENROLLMENT	PROJECTED PROGRAM ENROLLMENT
[illegible] ENG	47.	2830.	.017	2646.	44.
ELECTRONICS	226.	2830.	.080	2646.	212.
[illegible] DIALK	60.	2830.	.021	2646.	56.
WELDING	113.	2830.	.040	2646.	106.
AUTO ISBODY	272.	2830.	.097	2646.	255.
[illegible] STENO	399.	2830.	.141	2646.	374.
[illegible] AGT	112.	2830.	.040	2646.	105.
NURSE AIDE	571.	2830.	.202	2646.	536.
GEN MERCH	260.	2830.	.128	2646.	337.

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TAB TWO

METHOD FOUR

PLANNING YEAR 5

PROGRAM	AVERAGE PAST PROGRAM ENROLLMENT	AVERAGE PAST TOTAL ENROLLMENT	ENROLLMENT PERCENTAGE	PROJECTED TOTAL ENROLLMENT	PROJECTED PROGRAM ENROLLMENT
SMALL ENG	47.	2760.	.017	2463.	41.
ELECTRONICS	226.	2760.	.080	2463.	197.
CUSTODIALK	60.	2760.	.021	2463.	52.
WELDING	113.	2760.	.040	2463.	98.
AUTO ISBODY	272.	2760.	.097	2463.	238.
CLERK STENO	399.	2760.	.141	2463.	348.
FOOD MGT	112.	2760.	.040	2463.	98.
NURSE AIDE	571.	2760.	.202	2463.	499.
SEW MERCH	360.	2760.	.128	2463.	314.

INTRODUCTION

IF ONE OR MORE METHODS ARE USED TO PROJECT STUDENT INTEREST OR PROGRAM ENROLLMENT, THIS PORTION OF TAB TWO UTILIZES A WEIGHTED MEAN WHICH COMBINES THE PROJECTIONS OF ANY PREVIOUS METHODS. THE WEIGHTED MEAN ALLOWS THE ADMINISTRATOR TO AVERAGE PREVIOUS RESULTS WITH THE PROVISION THAT ONE METHOD CAN BE ASSIGNED MORE IMPORTANCE THAN THE OTHER.

COMPUTATIONS

COLUMN 4=COLUMN 2*COLUMN 3
COLUMN 7=COLUMN 5*COLUMN 6
COLUMN 8=COLUMN 4+COLUMN 7

TAB TWO

COMBINATION OF METHODS

PLANNING YEAR 1

PROGRAM	STUDENT INTEREST METHOD TWO	STUDENT INTEREST WEIGHT ONE	FACTOR ONE PARTIAL	STUDENT INTEREST METHOD FOUR	STUDENT INTEREST WEIGHT TWO	FACTOR TWO PARTIAL	PROJECTED PROGRAM ENROLLMENT
SHEET METAL ENG	43.	.50	21.72	47.	.50	23.63	45.
ELECTRONICS	241.	.40	97.41	229.	.60	137.36	235.
JOURNALISM	55.	.40	22.15	61.	.60	36.46	59.
WELDING	104.	.40	41.75	114.	.60	68.47	110.
AUTO BODY	236.	.30	70.67	276.	.70	193.88	264.
CLERK STENO	421.	.30	126.34	404.	.70	282.65	409.
PIPE FIT	129.	.25	32.29	113.	.75	84.82	117.
NURSE AIDE	546.	.25	136.42	578.	.75	433.74	570.
GEN MERCH	348.	.25	85.84	364.	.75	273.21	356.

TAB TWO

COMBINATION OF METHODS

PLANNING YEAR 2

PROGRAM	STUDENT INTEREST METHOD TWO	STUDENT INTEREST WEIGHT ONE	FACTOR ONE PARTIAL	STUDENT INTEREST METHOD FOUR	STUDENT INTEREST WEIGHT TWO	FACTOR TWO PARTIAL	PROJECTED PROGRAM ENROLLMENT
S1A ENG	45.	.50	22.66	48.	.50	23.80	46.
ELECTRONICS	252.	.40	100.73	231.	.60	138.33	239.
CJSFOODTALK	61.	.40	24.17	61.	.60	36.72	61.
WELDING	106.	.40	42.30	115.	.60	68.96	111.
AJTJ ISBODY	237.	.30	71.01	270.	.70	194.47	265.
CLERK STENO	428.	.30	128.42	407.	.70	284.68	413.
FOOD MGT	142.	.25	35.58	114.	.75	85.44	127.
NURSE AIDE	557.	.25	139.25	502.	.75	436.87	576.
DEN MERCH	339.	.25	84.86	367.	.75	275.18	360.

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TAB TWO

COMBINATION OF METHODS

PLANNING YEAR 3

PROGRAM	STUDENT INTEREST METHOD TWO	STUDENT INTEREST WEIGHT ONE	FACTOR ONE PARTIAL	STUDENT INTEREST METHOD FOUR	STUDENT INTEREST WEIGHT TWO	FACTOR TWO PARTIAL	PROJECTED PROGRAM ENROLLMENT
S[illegible]A ENG	43.	.50	21.71	46.	.50	22.80	45.
E[illegible]ECTRONICS	241.	.40	96.47	221.	.60	132.49	229.
CUSTODIAL[illegible]	59.	.40	23.15	59.	.60	35.17	50.
WELDING	101.	.40	40.52	110.	.60	66.05	107.
AUTO [illegible]SBOD[illegible]	227.	.30	68.81	266.	.70	186.26	254.
[illegible]ERK STENO	419.	.30	123.00	390.	.70	272.66	396.
[illegible]SS[illegible] MGT	136.	.25	34.01	109.	.75	81.83	116.
NURSE AIDE	533.	.25	133.37	558.	.75	418.42	552.
GEN MERCH	325.	.25	81.27	351.	.75	263.56	345.

TAB TWO

COMBINATION OF METHODS

PLANNING YEAR 4

PROGRAM	STUDENT INTEREST METHOD TWO	STUDENT INTEREST WEIGHT ONE	FACTOR ONE PARTIAL	STUDENT INTEREST METHOD FOUR	STUDENT INTEREST WEIGHT TWO	FACTOR TWO PARTIAL	PROJECTED PROGRAM ENROLLMENT
[illegible] ENG	42.	.50	20.84	44.	.50	21.89	43.
[illegible] ELECTRONICS	232.	.40	92.62	212.	.60	127.20	220.
[illegible] DENTAL	55.	.40	22.23	56.	.60	33.77	56.
WELDING	97.	.40	38.98	106.	.60	63.41	102.
AUTO MECHANICS BODY	210.	.30	65.30	255.	.70	178.83	244.
OFFICE STENO	394.	.30	118.09	374.	.70	261.79	380.
PRACTICAL NURSE	131.	.25	32.65	105.	.75	78.56	111.
NURSE AIDE	512.	.25	128.05	536.	.75	401.74	530.
GEN MERCH	312.	.25	78.03	337.	.75	253.05	331.

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TAB TWO

COMBINATION OF METHODS

PLANNING YEAR 5

PROGRAM	STUDENT INTEREST METHOD TWO	STUDENT INTEREST WEIGHT ONE	FACTOR ONE PARTIAL	STUDENT INTEREST METHOD FOUR	STUDENT INTEREST WEIGHT TWO	FACTOR TWO PARTIAL	PROJECTED PROGRAM ENROLLMENT
[illegible] ENG	39.	.30	19.48	41.	.50	20.33	40.
ELECTRONICS	216.	.40	86.22	197.	.60	118.42	205.
[illegible]DIALY	52.	.40	20.69	52.	.60	31.44	52.
WELDING	91.	.40	36.21	98.	.60	59.03	95.
AUTO BODY	283.	.30	68.79	238.	.70	166.48	227.
CLERK STENO	366.	.30	109.93	348.	.70	243.70	364.
FOOD SVCT	125.	.25	30.39	98.	.75	73.14	104.
NURSE AIDE	477.	.25	119.28	499.	.75	373.98	493.
SEW DESIGN	291.	.25	72.64	314.	.75	235.57	308.

INTRODUCTION

TAB THREE INTENDS TO PROVIDE THE FRAMEWORK FOR CALCULATING THE NUMBER OF GRADUATES OF EACH PROGRAM THAT MAY REASONABLY BE EXPECTED TO FIND JOBS USING THE SKILL THEY WERE TRAINED IN. THIS IS REFERRED TO AS LABOR MARKET DEMAND.

DEFINITIONS

1. PLACEMENT FACTOR-RATIO OF PLACEMENTS FOR A PROGRAM TO JOB DEMAND FOR THAT PROGRAM.
2. PROJECTED SKILL-RELATED PLACEMENT-PROJECTED PLACEMENTS BASED ON PAST JOB PLACEMENT FACTOR AND PROJECTED JOB DEMAND.

COMPUTATIONS

COLUMN 4=COLUMN 2/COLUMN 3
COLUMN 6=COLUMN 4.COLUMN 5

TAB THREE

PLANNING YEAR 1

PROGRAM	PAST AVERAGE PLACEMENTS			PAST AVERAGE JOB DEMAND			PLACEMENT FACTOR	PROJECTED JOB DEMAND	PROJECTED SKILL RELATED PLACEMENT
[illegible] ENG	30.	32.	33.	517.	532.	524.	.05	561.	34.
ELECTRONICS	150.	145.	135.	1705.	1709.	1507.	.09	1444.	132.
JOURNEYMAN	38.	41.	43.	770.	532.	631.	.05	588.	37.
MACHINE	50.	66.	53.	1015.	1120.	961.	.05	1000.	63.
AUTO BODY	170.	167.	177.	1753.	1823.	1402.	.10	1523.	157.
CLERK STENO	230.	245.	240.	2702.	2301.	3002.	.09	2803.	250.
FOOD MGT	75.	98.	91.	1420.	1203.	1536.	.05	1475.	94.
NURSE AIDE	330.	355.	377.	4233.	4315.	5002.	.05	5203.	412.
GEN MERCH	200.	207.	198.	3812.	3852.	3863.	.05	4002.	214.

TAB THREE

PLANNING YEAR 2

PROGRAM	PAST AVERAGE PLACEMENTS			PAST AVERAGE JOB DEMAND			PLACEMENT FACTOR	PROJECTED JOB DEMAND	PROJECTED SKILL RELATED PLACEMENT
SMALL ENG	30.	32.	33.	507.	532.	524.	.05	595.	36.
ELECTRONICS	130.	145.	155.	1735.	1709.	1507.	.09	1499.	136.
DIESEL	38.	41.	43.	770.	532.	631.	.06	653.	41.
WELDING	60.	66.	69.	1013.	1120.	963.	.06	1012.	64.
AUTO BODY	170.	167.	177.	1753.	1823.	1402.	.10	1546.	160.
SECR STENO	230.	245.	240.	2712.	2391.	3002.	.09	3045.	272.
FOOD SVC	75.	80.	91.	1420.	1203.	1536.	.05	1536.	87.
NURSE AIDE	350.	353.	357.	4230.	4315.	5082.	.08	5023.	397.
GEN MERCH	200.	207.	198.	3602.	3852.	3863.	.05	3523.	188.

TAB THREE

PLANNING YEAR 3

PROGRAM	PAST AVERAGE PLACEMENTS			PAST AVERAGE JOB DEMAND			PLACEMENT FACTOR	PROJECTED JOB DEMAND	PROJECTED SKILL RELATED PLACEMENT
SMALL ENG	30.	32.	33.	507.	532.	524.	.05	632.	30.
ELECTRONICS	130.	143.	155.	1705.	1709.	1507.	.09	1523.	139.
WELDING	38.	41.	43.	770.	532.	631.	.05	558.	42.
AUTO BODY	50.	65.	59.	1015.	1120.	963.	.05	1013.	64.
CLERK STENO	170.	167.	177.	1733.	1823.	1402.	.10	1523.	157.
FOOD SVC	230.	245.	240.	2732.	2301.	3002.	.09	3046.	272.
NURSE AIDE	75.	80.	91.	1420.	1203.	1536.	.06	1578.	90.
DEN MERCH	350.	362.	357.	4230.	4315.	5002.	.08	5078.	402.
	200.	207.	198.	3612.	3852.	3863.	.05	3524.	198.

TAB THREE

PLANNING YEAR 4

PROGRAM	PAST AVERAGE PLACEMENTS			PAST AVERAGE JOB DEMAND			PLACEMENT FACTOR	PROJECTED JOB DEMAND	PROJECTED SKILL RELATED PLACEMENT
SHEET ENG	30.	32.	33.	517.	532.	524.	.06	634.	40.
ELECTRONICS	150.	145.	155.	1715.	1709.	1507.	.09	1601.	146.
CUSTODIALK	38.	41.	43.	770.	532.	631.	.06	604.	43.
WELDING	58.	66.	69.	1005.	1120.	961.	.06	1045.	66.
AUTO BODY	170.	167.	177.	1753.	1823.	1402.	.10	1565.	162.
CLERK STENO	230.	245.	240.	2712.	2301.	3002.	.09	3456.	309.
FOOD MGT	75.	80.	91.	1428.	1203.	1536.	.05	1509.	90.
NURSE AIDE	350.	365.	337.	4230.	4315.	5002.	.09	5121.	405.
SEW MERCH	200.	207.	198.	3612.	3852.	3663.	.05	3512.	198.

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TAB THREE

PLANNING YEAR 5

PROGRAM	PAST AVERAGE PLACEMENTS			PAST AVERAGE JOB DEMAND			PLACEMENT FACTOR	PROJECTED JOB DEMAND	PROJECTED SKILL RELATED PLACEMENT
SMALL ENG	30.	32.	33.	507.	532.	524.	.06	705.	43.
ELECTRONICS	150.	145.	155.	1735.	1709.	1507.	.09	1654.	151.
INDUSTRIAL ARTS	38.	41.	43.	770.	532.	631.	.06	677.	41.
WELDING	90.	86.	99.	1005.	1120.	963.	.07	1146.	66.
AUTO BODY	170.	167.	177.	1753.	1823.	1402.	.10	1709.	165.
CLERK STENO	238.	245.	240.	2702.	2301.	3002.	.09	3458.	309.
FOOD MGT	75.	88.	91.	1420.	1203.	1536.	.06	1578.	90.
NURSE AIDE	350.	365.	337.	4230.	4315.	5002.	.09	5178.	410.
GEN MERCH	200.	207.	198.	3602.	3852.	3863.	.07	3002.	160.

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INTRODUCTION

TAB 4 IS DESIGNED TO ALLOW USE OF THE PREVIOUS TABS TO CREATE A SINGLE PROJECTION FOR THE ENROLLMENT FOR EACH PROGRAM OR COURSE OF STUDY. THE TAB ALLOWS THE ADMINISTRATOR TO WEIGH THE USE OF LABOR MARKET OR STUDENT INTEREST PROJECTIONS ACCORDING TO THE DISTRICT'S PREFERENCE.

DEFINITIONS

1. DESIRABLE STUDENT-INTEREST RATIO-A DECIMAL FIGURE INDICATING THE AMOUNT OF STUDENT INTEREST DESIRED BY THE DISTRICT FOR EACH TRAINING STATION OR TRAINING POSITION AVAILABLE.
2. DESIRABLE SKILL-RELATED PLACEMENT RATIO-A RATIO INDICATING THE PERCENT OF EACH CLASS THAT THE DISTRICT EXPECTS TO SEEK EMPLOYMENT IN THAT FIELD DIRECTLY UPON GRADUATION, AND WHOM YOU EXPECT TO ASSIST WITH PLACEMENT.
3. OPTIMUM PROGRAM SIZE-THE TARGET SIZE OF EACH PROGRAM IN THE PROJECTED YEAR, BASED ON PROJECTED JOB DEMAND AND THE DESIRABLE SKILL-RELATED PLACEMENT RATIO.

COMPUTATIONS

COLUMN 4=COLUMN 2(RESULTS OF TAB 3)/COLUMN 3
COLUMN 6=COLUMN 4.COLUMN 5
COLUMN 8=COLUMN 6-COLUMN 7(RESULTS OF TAB 2)
COLUMN 9=THE SMALLER FIGURE OF COLUMNS 4 AND 7

TAB FOUR

PLANNING YEAR 1

PROGRAM	PROJECTED SKILL RELATED PLACEMENT	DESIRED SKILL RELATED PLACEMENT RATIO	OPTIMUM PROGRAM SIZE	DESIRED STUDENT INTEREST RATIO	DESIRED STUDENT INTEREST BASED ON OPT. PROGRAM SIZE	TAB TWO PROJECTED ENROLLMENT	ADJUSTMENT IN STUDENTINTEREST	PROJECTED PROGRAM ENROLLMENT
SHT. ENG	34.	.70	49.	1.10	54.	45.	9.	45.
ELECTRONICS	132.	.70	189.	1.10	208.	235.	-27.	189.
SOCIAL	37.	.65	57.	1.10	63.	59.	4.	57.
WELDING	63.	.75	84.	1.10	93.	110.	-18.	84.
AUTO BODY	157.	.75	210.	1.10	231.	264.	-33.	210.
CLERK STENO	250.	.70	350.	1.10	393.	409.	-16.	350.
SOCIAL	84.	.75	112.	1.10	123.	117.	6.	112.
NURSE AIDE	412.	.68	605.	1.10	666.	570.	96.	570.
DEN HEAL	214.	.60	357.	1.10	392.	358.	34.	357.

TAB FOUR

PLANNING YEAR 2

PROGRAM	PROJECTED SKILL RELATED PLACEMENT	DESIRED SKILL RELATED PLACEMENT RATIO	OPTIMUM PROGRAM SIZE	DESIRED STUDENT INTEREST RATIO	DESIRED STUDENT INTEREST BASED ON OPT. PROGRAM SIZE	TAB TWO PROJECTED ENROLLMENT	ADJUSTMENT IN STUDENT INTEREST	PROJECTED PROGRAM ENROLLMENT
SMA ENG	36.	.70	52.	1.10	57.	43.	10.	46.
ELECTRONICS	136.	.70	195.	1.10	214.	239.	-25.	195.
CUSTODIALK	41.	.65	63.	1.10	70.	61.	9.	61.
WELDING	64.	.75	85.	1.10	94.	111.	-18.	85.
AUTO BODY	150.	.75	213.	1.10	234.	266.	-31.	213.
CLERK STENO	272.	.70	399.	1.10	427.	413.	14.	389.
FOOD SVC	87.	.75	116.	1.10	128.	121.	7.	116.
NURSE AIDE	337.	.68	585.	1.10	643.	575.	67.	576.
DEN HEROM	188.	.60	314.	1.10	345.	361.	-15.	314.

TAB FOUR

PLANNING YEAR 3

PROGRAM	PROJECTED SKILL RELATED PLACEMENT	DESIRED SKILL RELATED PLACEMENT RATIO	OPTIMUM PROGRAM SIZE	DESIRED STUDENT INTEREST RATIO	DESIRED STUDENT INTEREST BASED ON OPT. PROGRAM SIZE	TAB TWO PROJECTED ENROLLMENT	ADJUSTMENT IN STUDENT INTEREST	PROJECTED PROGRAM ENROLLMENT
SMALL ENG	38.	.70	55.	1.10	50.	45.	16.	45.
ELECTRONICS	139.	.70	139.	1.10	219.	229.	-10.	199.
DUPLICATING	42.	.65	54.	1.10	70.	58.	12.	58.
WELDING	54.	.75	85.	1.10	94.	107.	-13.	95.
AUTO BODY	157.	.75	210.	1.10	231.	254.	-24.	210.
CLERK STENO	272.	.70	389.	1.10	428.	396.	32.	389.
FOOD SERV	98.	.75	119.	1.10	131.	115.	15.	116.
NURSE AIDE	402.	.60	591.	1.10	650.	552.	98.	552.
SEN MERCH	188.	.60	314.	1.10	345.	345.	1.	314.

TAB FOUR

PLANNING YEAR 4

PROGRAM	PROJECTED SKILL RELATED PLACEMENT	DESIRED SKILL RELATED PLACEMENT RATIO	OPTIMUM PROGRAM SIZE	DESIRED STUDENT INTEREST RATIO	DESIRED STUDENT INTEREST BASED ON OPT. PROGRAM SIZE	TAB TWO PROJECTED ENROLLMENT	ADJUSTMENT IN STUDENT INTEREST	PROJECTED PROGRAM ENROLLMENT
SMALL ENG	48.	.70	57.	1:10	52.	43.	20.	43.
ELECTRONICS	146.	.70	209.	1:10	230.	220.	10.	209.
INDUSTRIAL	43.	.65	67.	1:10	73.	52.	17.	56.
WELDING	66.	.75	88.	1:10	97.	102.	-6.	88.
AUTO BODY	162.	.75	215.	1:10	237.	244.	-7.	215.
SECRL STENO	309.	.70	441.	1:10	485.	380.	105.	380.
FOOD SVC	90.	.75	120.	1:10	132.	111.	21.	111.
NURSE AIDE	405.	.68	596.	1:10	656.	530.	126.	530.
DEN HEROA	188.	.60	313.	1:10	344.	331.	13.	313.

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TAB FOUR

PLANNING YEAR 5

PROGRAM	PROJECTED SKILL RELATED PLACEMENT	DESIRED SKILL RELATED PLACEMENT RATIO	OPTIMUM PROGRAM SIZE	DESIRED STUDENT INTEREST RATIO	DESIRED STUDENT INTEREST BASED ON OPT. PROGRAM SIZE	TAB TWO PROJECTED ENROLLMENT	ADJUSTMENT IN STUDENT INTEREST	PROJECTED PROGRAM ENROLLMENT
SMALL ENG	43.	.70	61.	1.10	67.	40.	28.	40.
ELECTRONICS	151.	.70	216.	1.10	238.	205.	33.	205.
CUSTODIAL K	43.	.65	65.	1.10	72.	52.	20.	52.
WELDING	66.	.75	88.	1.10	97.	95.	2.	88.
AUTO BODY	185.	.75	246.	1.10	271.	227.	44.	227.
CLERK STENO	309.	.70	441.	1.10	485.	354.	132.	354.
FOOD SVC	90.	.75	119.	1.10	131.	104.	28.	104.
NURSE AIDE	410.	.60	603.	1.10	663.	493.	170.	493.
GEN MERCH	160.	.60	267.	1.10	294.	308.	-14.	267.

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INTRODUCTION

TAB FIVE USES THE RESULTS OF PREVIOUS TABS TOGETHER WITH EXISTING AVERAGE CLASS SIZES AND STAFF REQUIREMENTS TO ARRIVE AT A PROJECTED NUMBER OF TEACHING PERSONNEL REQUIRED.

DEFINITIONS

1. TOTAL COURSE ENROLLMENT-THE TOTAL NUMBER OF STUDENTS ENROLLED FOR EACH PROGRAM LISTED.
2. AVERAGE CLASS SIZE-AVERAGE,EXPECTED OR MANDATED NUMBER OF STUDENTS IN A CLASS OR SECTION.
3. CURRENT YEAR TEACHERS AVAILABLE-NUMBER OF TEACHERS AVAILABLE TO TEACH IN A COURSE OR PROGRAM.
4. TEACHERS REQUIRED-THE NUMBER OF TEACHERS THAT WILL NEED TO BE ADDED TO TEACH THE PROGRAM AT THE TARGET ENROLLMENT LEVEL.

COMPUTATIONS

COLUMN 4=COLUMN 2(RESULTS OF TAB 4)/COLUMN 3
COLUMN 6=COLUMN 4-COLUMN 5

TAB FIVE

PLANNING YEAR 1

PROGRAM	PROJECTED COURSE ENROLLMENT	CLASS SIZE	TEACHER REQUIRED	TEACHERS AVAILABLE	PERSONNEL ADJUSTMENT
SMALL ENG	95.	21.	2.2	1.5	-.7
ELECTRONICS	119.	22.	5.6	10.0	-1.4
CUSTODIALK	57.	20.	2.9	3.5	-.6
AIRLINE	96.	17.	5.0	6.5	-1.5
AUTO BODY	210.	15.	14.0	16.3	-2.4
CLERK STENO	336.	19.	18.9	17.0	1.8
DDO MGT	112.	20.	5.6	6.2	-.4
NURSE AIDE	570.	22.	25.9	25.5	.4
GEN MERCH	352.	19.	18.8	16.0	2.8

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TAB FIVE

PLANNING YEAR 2

PROGRAM	PROJECTED COURSE ENROLLMENT	CLASS SIZE	TEACHER REQUIRED	TEACHERS AVAILABLE	PERSONNEL ADJUSTMENT
ENG ENG	46.	21.	2.2	1.5	.7
ELECTRONICS	198.	22.	9.0	10.0	-1.0
JOURNALISM	63.	20.	3.2	3.5	-.3
MATHEMATICS	58.	17.	3.3	4.5	-1.2
MATH BOOK	258.	15.	16.7	19.0	-2.3
CLERK STENO	369.	19.	19.4	17.0	2.4
SOCIAL	135.	30.	4.5	6.0	-1.5
WOODSHOP	429.	20.	21.4	20.0	1.4
GEN SCIENCE	314.	19.	16.5	16.0	.5

TAB FIVE

PLANNING YEAR 3

PROGRAM	PROJECTED COURSE ENROLLMENT	CLASS SIZE	TEACHER REQUIRED	TEACHERS AVAILABLE	PERSONNEL ADJUSTMENT
ENG ENG	45.	21.	2.1	1.5	.6
ELECTRONICS	190.	22.	8.6	10.0	-1.4
JOURNALISM	58.	20.	2.9	3.5	-.6
MATHEMATICS	60.	17.	3.5	4.5	-1.0
MATH BOOK	248.	15.	16.0	19.0	-3.0
CLERK STENO	379.	19.	19.9	17.0	2.9
SOCIAL	139.	30.	4.6	6.0	-1.4
WOODSHOP	410.	20.	20.5	20.0	.5
GEN SCIENCE	324.	19.	17.1	16.0	1.1

TAB FIVE

PLANNING YEAR 4

PROGRAM	PROJECTED COURSE ENROLLMENT	CLASS SIZE	TEACHER REQUIRED	TEACHERS AVAILABLE	PERSONNEL ADJUSTMENT
[illegible]	43.	21.	2.0	1.5	.5
ELECTRONICS	209.	22.	9.5	10.0	-.5
CUSTODIALK	56.	20.	2.8	3.5	-.7
WELDING	88.	17.	5.2	6.5	-1.3
AUTO BODY	215.	15.	14.3	16.3	-2.0
CLERK STENO	350.	19.	20.0	17.0	3.0
FOOD SVC	111.	20.	5.6	6.0	-.4
NURSE AIDE	530.	22.	24.1	25.5	-1.4
GEN MERCH	313.	19.	16.5	16.0	.5

TAB FIVE

PLANNING YEAR 5

PROGRAM	PROJECTED COURSE ENROLLMENT	CLASS SIZE	TEACHER REQUIRED	TEACHERS AVAILABLE	PERSONNEL ADJUSTMENT
S4A ENG	43.	21.	1.3	1.5	.4
ELECTRONICS	205.	22.	9.3	10.0	-.7
CASEDDIALR	52.	20.	2.5	3.5	-.9
WELDING	88.	17.	5.2	6.5	-1.3
AUTO BODY	227.	15.	15.2	16.3	-1.2
CLERK STENO	354.	19.	18.5	17.0	1.6
FOOD MGT	184.	20.	5.2	6.0	-.8
NURSE AIDE	493.	22.	22.4	25.5	-3.1
GEN MERCH	267.	19.	14.1	16.0	-1.9

INTRODUCTION

TAB SIX USES THE TEACHING PERSONNEL REQUIREMENTS FROM TAB FIVE TO PROJECT THE INSTRUCTIONAL STAFF COSTS BY PROGRAM. THE METHOD RELIES ON USING CURRENT ESTIMATES OF SALARIES AND FRINGE BENEFITS WITH AVERAGE ANTICIPATED INCREASES TO THE PROJECTION YEARS.

DEFINITIONS

1. PER MEMBER TEACHING STAFF COST-THE AVERAGE TOTAL COST OF ONE TEACHING STAFF MEMBER. TWO STAFF COSTS ARE REQUIRED-ONE FOR CONTINUING STAFF, ONE FOR NEW STAFF.
2. INFLATION FACTOR-THE RATE OF INCREASE IN PER MEMBER STAFF COST AND IS CALCULATED IN THE SAME WAY AS THE COMPOUND INTEREST FORMULA.

COMPUTATIONS

COLUMN [illegible]=COLUMN 3(FROM TAB 5).COLUMN 4
COLUMN [illegible]=COLUMN 5.COLUMN 6
COLUMN 8=COLUMN 8(FROM TAB 5).COLUMN 9
COLUMN 11=COLUMN 5.COLUMN 10
COLUMN 12=COLUMN 7*COLUMN 11
IF COLUMN 5 IS LESS THAN 9, COLUMN 10=0

TAB SIX

PLANNING YEAR 1

PROGRAM	PROJECTED STAFF	CONTINUING STAFF	CONTINUING PER MEMBER COST	TOT. EST. CONTINUING COST	INFLATION FACTOR	TOTAL PROJECTED CONTINUING STAFF COST	TOTAL NEW STAFF	NEW PER MEMBER COST	TOTAL NEW STAFF COST	PROJECTED TOTAL NEW STAFF COST	PROJECTED TOTAL STAFF COST
[illegible] ENG	2.2	1.5	$12200.	$ 18300.	1.08	$ 19764.	.7	$10800.	$ 7126.	$ 7696.	$ 27460.
ELECTRONICS	9.6	10.8	$12700.	$137088.	1.08	$137160.	-1.4	$10900.	$ 0.	$ 0.	$ 137160.
[illegible]DIAL<	2.9	3.3	$12100.	$ 42328.	1.08	$ 45738.	-.6	$10600.	$ 0.	$ 0.	$ 45738.
WELDING	5.8	6.5	$12500.	$ 81250.	1.08	$ 87750.	-1.5	$10900.	$ 0.	$ 0.	$ 87750.
AUTO BODY	14.8	16.3	$12900.	$210657.	1.08	$227510.	-2.4	$11000.	$ 0.	$ 0.	$ 227510.
CLERK STENO	18.8	17.9	$12000.	$214800.	1.08	$220329.	1.8	$10750.	$ 19510.	$ 21179.	$ 241499.
[illegible] AST	3.6	6.8	$12500.	$ 75000.	1.08	$ 81030.	-.4	$10400.	$ 0.	$ 0.	$ 81030.
NURSE AIDE	25.9	25.2	$12100.	$308556.	1.08	$333236.	.4	$10500.	$ 4372.	$ 4722.	$ 337956.
GEN RESEARCH	18.8	16.0	$11900.	$190400.	1.08	$205632.	2.8	$10502.	$ 29068.	$ 31384.	$ 237016.

TAB SIX

PLANNING YEAR 2

PROGRAM	PROJECTED STAFF	CONTINUING STAFF	CONTINUING PER MEMBER COST	TOT. EST. CONTINUING COST	INFLATION FACTOR	TOTAL PROJECTED CONTINUING STAFF COST	TOTAL NEW STAFF	NEW PER MEMBER COST	TOTAL NEW STAFF COST	PROJECTED TOTAL NEW STAFF COST	PROJECTED TOTAL STAFF COST
SAN. ENG	2.2	1.5	$12200.	$ 18300.	1.17	$ 21345.	.7	$10800.	7696.	8977.	30322.
ELECTRONICS	8.8	10.0	$12700.	$127000.	1.17	$148133.	-1.2	$10900.	0.	0.	148133.
CUSTODIALK	3.0	3.5	$12100.	$ 42350.	1.17	$ 49397.	-.5	$10600.	0.	0.	49397.
WELDING	5.8	6.3	$12530.	$ 81250.	1.17	$ 94770.	-1.5	$10900.	0.	0.	94770.
ADTO DOOR	14.2	16.3	$12980.	$210657.	1.17	$245710.	-2.1	$11000.	0.	0.	245710.
CLERK STENO	20.6	17.8	$12000.	$204000.	1.17	$237946.	3.4	$10750.	37881.	43251.	281197.
FOOD SVC	3.8	5.0	$12500.	$ 75000.	1.17	$ 87480.	-.2	$10400.	0.	0.	87480.
NURSE AIDE	25.2	25.5	$12100.	$308550.	1.17	$359893.	.7	$10500.	7213.	8413.	368306.
DEV RESCH	16.5	16.8	$11900.	$190680.	1.17	$222093.	.5	$10582.	5470.	6380.	228462.

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TAB SIX

PLANNING YEAR 3

PROGRAM	PROJECTED STAFF	CONTINUING STAFF	CONTINUING PER MEMBER COST	TOT. EST. CONTINUING COST	INFLATION FACTOR	TOTAL PROJECTED CONTINUING STAFF COST	TOTAL NEW STAFF	NEW PER MEMBER COST	TOTAL NEW STAFF COST	PROJECTED TOTAL NEW STAFF COST	PROJECTED TOTAL STAFF COST
SM. L ENG	2.1	1.5	$12200.	$ 18300.	1.26	$ 23053.	-.6	$14800.	$ 6687.	$ 8424.	$ 31477.
ELECTRONICS	9.4	10.0	$12700.	$127000.	1.26	$159993.	-1.0	$10900.	$ 0.	$ 0.	$ 159983.
CUSTODIAL	2.9	3.5	$12100.	$ 42350.	1.26	$ 53349.	-.6	$10600.	$ 0.	$ 0.	$ 53349.
WELDING	5.8	6.3	$12500.	$ 81250.	1.26	$102352.	-1.5	$10900.	$ 0.	$ 0.	$ 102352.
AUTO BODY	14.8	16.3	$12900.	$210657.	1.26	$265357.	-2.4	$11000.	$ 0.	$ 0.	$ 265367.
ASSEMBLERS/STEND	20.5	17.0	$12000.	$204000.	1.26	$256914.	3.5	$10750.	$ 37153.	$ 46802.	$ 303734.
FOOD SVC	5.8	6.0	$12500.	$ 75000.	1.26	$ 94478.	-.2	$10400.	$ 0.	$ 0.	$ 94478.
NURSE AIDE	25.1	25.5	$12100.	$308550.	1.26	$388684.	-.4	$10500.	$ 0.	$ 0.	$ 388684.
GEN MERCH	15.5	15.0	$11900.	$190400.	1.26	$239849.	.5	$10502.	$ 3319.	$ 6952.	$ 246802.

TAB SIX

PLANNING YEAR 4

PROGRAM	PROJECTED STAFF	CONTINUING STAFF	CONTINUING PER MEMBER COST	TOT. EST. CONTINUING COST	INFLATION FACTOR	TOTAL PROJECTED CONTINUING STAFF COST	TOTAL NEW STAFF	NEW PER MEMBER COST	TOTAL NEW STAFF COST	PROJECTED TOTAL NEW STAFF COST	PROJECTED TOTAL STAFF COST
SMALL ENG	2.8	1.3	$12200.	$ 18300.	1.36	$ 24837.	.5	$10800.	$ 5775.	$ 7856.	$ 32753.
ELECTRONICS	9.5	10.0	$12700.	$127000.	1.36	$172782.	-.5	$10200.	$ 0.	$ 0.	$ 172782.
SERVICE TALK	2.8	3.5	$12100.	$ 42350.	1.35	$ 57617.	-.7	$10600.	$ 0.	$ 0.	$ 57617.
WELDING	5.2	6.5	$12500.	$ 81250.	1.36	$110540.	-1.3	$10900.	$ 0.	$ 0.	$ 110540.
AUTO BODY	14.4	16.3	$12900.	$210657.	1.36	$286597.	-2.0	$11000.	$ 0.	$ 0.	$ 286597.
CLERK STENO	20.0	17.0	$12000.	$204000.	1.36	$277540.	3.0	$10750.	$ 32182.	$ 43784.	$ 321324.
FOOD MGT	3.5	5.0	$12500.	$ 75000.	1.36	$102037.	-.4	$10400.	$ 0.	$ 0.	$ 102037.
NURSE AIDE	24.1	25.5	$12100.	$308550.	1.35	$419779.	-1.4	$10500.	$ 0.	$ 0.	$ 419779.
GEN MERCH	16.5	15.0	$11900.	$190400.	1.36	$259037.	.5	$10502.	$ 4929.	$ 6705.	$ 265742.

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TAB SIX

PLANNING YEAR 5

PROGRAM	PROJECTED STAFF	CONTINUING STAFF	CONTINUING PER MEMBER COST	TOT. EST. CONTINUING COST	INFLATION FACTOR	TOTAL PROJECTED CONTINUING STAFF COST	TOTAL NEW STAFF	NEW PER MEMBER COST	TOTAL NEW STAFF COST	PROJECTED TOTAL NEW STAFF COST	PROJECTED TOTAL STAFF COST
ENG	1.9	1.5	$12200.	$ 18300.	1.47	$ 26839.	-.4	$10800.	$ 4267.	6254.	$ 33143.
ELECTRONICS	9.3	10.0	$12700.	$127000.	1.47	$186605.	-.7	$10900.	$ 0.	0.	$186605.
DIESEL MECH	2.6	3.0	$12100.	$ 42350.	1.47	$ 62226.	-.9	$10600.	$ 0.	0.	$ 62226.
WELDING	3.2	2.5	$12500.	$ 31250.	1.47	$ 45938.	-.3	$10900.	$ 0.	0.	$ 45938.
AUTO BODY	15.2	14.3	$12900.	$184470.	1.47	$271071.	-1.3	$10900.	$ 0.	0.	$271071.
CLERK STENO	18.6	17.8	$12010.	$213778.	1.47	$314153.	-1.2	$11000.	$ 0.	0.	$314153.
FOOD MGT	7.2	6.0	$12500.	$ 75000.	1.47	$110200.	1.6	$10750.	$ 17335.	25470.	$135670.
NURSE AIDE	22.4	25.5	$12100.	$308550.	1.47	$453361.	-3.1	$10500.	$ 0.	0.	$453361.
GEN MERCH	14.1	13.0	$11900.	$190400.	1.47	$279760.	-1.9	$10502.	$ 0.	0.	$279760.

INTRODUCTION

TAB SEVEN PROJECTS THE CAPITAL COSTS BY PROGRAM BASED ON PRESENT ESTIMATES OF CAPITAL COSTS FOR THOSE PROGRAMS PLUS A FIXED INFLATION FACTOR. THE RESULT IS A PROJECTION OF COSTS FOR THE PLANNING YEAR.

DEFINITIONS

1. TRAINING STATION-NUMBER OF PHYSICAL POSITIONS ALLOTTED FOR EACH PROGRAM, BASED ON (1) THE NUMBER OF STUDENTS IN EACH PROGRAM, AND (2) THE NUMBER OF STUDENTS USING EACH STATION.
2. INFLATION FACTOR-SAME AS IN TAB SIX, THE ONLY DIFFERENCE BEING THAT COST INCREASE USED IS THAT FOR CAPITAL EXPENDITURES INSTEAD OF TEACHING STAFF COST.

COMPUTATIONS

COLUMN 4=COLUMN 2.COLUMN 3
COLUMN 6=COLUMN 4.COLUMN 5

TAB SEVEN

PLANNING YEAR 1

PROGRAM	NUMBER OF TRAINING STATIONS	PER-STATION ESTIMATED CAPITAL OUTLAY	TOTAL ESTIMATED CAPITAL OUTLAY	INFLATION FACTOR	TOTAL PROJECTED CAPITAL OUTLAY
DENTAL ENG	20.	$ 4000.00	$ 80000.00	1.03	$ 82400.00
ELECTRONICS	32.	$ 1600.00	$ 51200.00	1.04	$ 53248.00
DIESEL/DIESEL MECH	23.	$ 2500.00	$ 57500.00	1.04	$ 59800.00
WELDING	29.	$ 3500.00	$ 101500.00	1.06	$ 107590.00
AUTO BODY	40.	$ 1230.00	$ 49200.00	1.05	$ 51660.00
SECRET STENO	200.	$ 500.00	$ 100000.00	1.04	$ 104000.00
FOOD MGT	35.	$ 1340.00	$ 46900.00	1.05	$ 49245.00
NURSE AIDE	53.	$ 1300.00	$ 68900.00	1.05	$ 72345.00
GEN MERCH	56.	$ 500.00	$ 28000.00	1.10	$ 30800.00

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TAB SEVEN

PLANNING YEAR 2

PROGRAM	NUMBER OF TRAINING STATIONS	PER-STATION ESTIMATED CAPITAL OUTLAY	TOTAL ESTIMATED CAPITAL OUTLAY	INFLATION FACTOR	TOTAL PROJECTED CAPITAL OUTLAY
SMALL ENG	20.	$4000.00	$ 80000.00	1.06	$ 84872.00
ELECTRONICS	32.	$1600.00	$ 51200.00	1.08	$ 55377.92
WOODWORK	25.	$2500.00	$ 57500.00	1.08	$ 62192.00
WELDING	23.	$3500.00	$101500.00	1.12	$114046.40
AUTO BODY	40.	$1230.00	$ 49200.00	1.10	$ 54243.00
CLERK STENO	200.	$ 500.00	$100000.00	1.08	$108160.00
FOOD MGT	35.	$1340.00	$ 46900.00	1.10	$ 51707.25
NURSE AIDE	60.	$1300.00	$ 68900.00	1.10	$ 75962.25
GEN MERCH	55.	$ 500.00	$ 28000.00	1.21	$ 33[illegible]0.00

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TAB SEVEN

PLANNING YEAR 3

PROGRAM	NUMBER OF TRAINING STATIONS	PER-STATION ESTIMATED CAPITAL OUTLAY	TOTAL ESTIMATED CAPITAL OUTLAY	INFLATION FACTOR	TOTAL PROJECTED CAPITAL OUTLAY
[illegible] ENG	28.	$4000.00	$ 80000.00	1.09	$ 87418.16
ELECTRONICS	32.	$1600.00	$ 51200.00	1.12	$ 57503.04
JUSTDOTALK	23.	$2500.00	$ 57500.00	1.12	$ 64679.68
WELDING	29.	$3500.00	$101500.00	1.19	$120808.12
AUTO BODY	48.	$1230.00	$ 49200.00	1.16	$ 56965.15
CLERK STENO	200.	$ 500.00	$100000.00	1.12	$112406.40
FOOD SVC	35.	$1340.00	$ 46900.00	1.16	$ 54292.61
NURSE AIDE	53.	$1300.00	$ 68900.00	1.16	$ 79760.36
DENTAL	56.	$ 500.00	$ 28000.00	1.33	$ 37266.00

TAB SEVEN

PLANNING YEAR 4

PROGRAM	NUMBER OF TRAINING STATIONS	PER-STATION ESTIMATED CAPITAL OUTLAY	TOTAL ESTIMATED CAPITAL OUTLAY	INFLATION FACTOR	TOTAL PROJECTED CAPITAL OUTLAY
[illegible] ENG	20.	$4000.00	$ 80000.00	1.13	$ 90040.70
[illegible] ELECTRONICS	32.	$1600.00	$ 51200.00	1.17	$ 59896.76
[illegible] DIESEL	23.	$2500.00	$ 57500.00	1.17	$ 67266.87
[illegible] WELDING	29.	$3500.00	$101500.00	1.26	$127891.41
[illegible] BODY	40.	$1230.00	$ 49200.00	1.22	$ 59802.91
[illegible] STENO	200.	$ 500.00	$100000.00	1.17	$116965.86
[illegible] AUTO	37.	$1248.00	$ 46900.00	1.22	$ 57007.24
[illegible] AIDE	21.	$1300.00	$ 68980.00	1.22	$ 83768.38
[illegible] MERCH	55.	$ 500.00	$ 28000.00	1.46	$ 40994.80

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TA3 SEVEN

PLANNING YEAR 5

PROGRAM	NUMBER OF TRAINING STATIONS	PER-STATION ESTIMATED CAPITAL OUTLAY	TOTAL ESTIMATED CAPITAL OUTLAY	INFLATION FACTOR	TOTAL PROJECTED CAPITAL OUTLAY
S4A ENG	20.	$4000.00	$ 80000.00	1.16	$ 92741.93
ELECTRONICS	32.	$1600.00	$ 51200.00	1.22	$ 62292.63
4 JOURNALK	23.	$2500.00	$ 57500.00	1.22	$ 69957.54
WELDING	23.	$3500.00	$101500.00	1.34	$135829.90
AUTO BODY	40.	$1230.00	$ 49200.00	1.28	$ 62793.05
CLERK STENO	203.	$ 500.00	$100000.00	1.22	$121665.29
FOOD MGT	35.	$1340.00	$ 46900.00	1.28	$ 59857.61
NURSE AIDE	53.	$1300.00	$ 68900.00	1.28	$ 87935.80
GEN MERCH	56.	$ 500.00	$ 28000.00	1.61	$ 45094.28

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INTRODUCTION

TAB EIGHT PROJECTS THE COST OF CONSMABLES FOR EACH PROGRAM BASED ON THE PRESENT COST FOR THAT OR AN EQUIVALENT PROGRAM. A COST INCREASE FACTOR BASED ON COST INCREASES OF PREVIOUS YEARS IS THEN APPLIED TO THE CURRENT FIGURE TO OBTAIN AN ESTIMATE OF FUTURE COSTS.

DEFINITIONS

1. TRAINING STATION-THE SAME FIGURE USED IN TAB SEVEN.
2. INFLATION FACTOR-SAME AS IN TABS SIX AND SEVEN, WITH THE EXCEPTION THAT THE INFLATION RATE USED IS THAT FOR CONSUMABLES RATHER THAN INSTRUCTION OR CAPITAL COST.

COMPUTATIONS

COLUMN 4=COLUMN 2.COLUMN 3
COLUMN 6=COLUMN 4.COLUMN 5
COLUMN 7=TOTAL PROJECTED OVERALL COSTS OF TABS 6,7, AND 8

TAB EIGHT

PLANNING YEAR 1

PROGRAM	NUMBER OF TRAINING STATIONS	ESTIMATED PER-STATION CONSUMABLES	TOTAL ESTIMATED CONSUMABLES	INFLATION FACTOR	TOTAL PROJECTED CONSUMABLES COST	TOTAL PROJECTED OVERALL COST
[illegible]A ENG	20.	$ 200.00	$ 4000.00	1.05	$ 4200.00	$ 114060.43
ELECTRONICS	32.	$ 150.00	$ 4800.00	1.05	$ 5040.00	$ 195446.80
DRAFTSMAN	23.	$ 75.00	$ 1725.00	1.05	$ 1811.25	$ 107349.25
WELDING	29.	$ 300.00	$ 8700.00	1.11	$ 9657.00	$ 204997.00
AUTO BODY	40.	$ 350.00	$ 14000.00	1.05	$ 14700.00	$ 293869.56
[illegible]ECR, STENO	200.	$ 150.00	$ 30000.00	1.05	$ 31500.00	$ 376990.78
[illegible]ED, MT	35.	$ 100.00	$ 3500.00	1.02	$ 3570.00	$ 133815.00
NURSE AIDE	53.	$ 200.00	$ 10600.00	1.10	$ 11660.00	$ 421961.11
SEN MERCH	56.	$ 200.00	$ 11200.00	1.22	$ 13664.00	$ 281480.46

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TAB EIGHT

PLANNING YEAR 2

PROGRAM	NUMBER OF TRAINING STATIONS	ESTIMATED PER-STATION CONSUMABLES	TOTAL ESTIMATED CONSUMABLES	INFLATION FACTOR	TOTAL PROJECTED CONSUMABLES COST	TOTAL PROJECTED OVERALL COST
SMALL ENG	20.	$ 200.00	$ 4000.00	1.10	$ 4410.00	$ 119603.99
ELECTRONICS	32.	$ 150.00	$ 4800.00	1.10	$ 5292.00	$ 208882.72
AUTODIALK	23.	$ 75.00	$ 1725.00	1.10	$ 1901.81	$ 113490.85
WELDING	29.	$ 300.00	$ 8700.00	1.23	$ 10719.27	$ 219534.67
AUTO BODY	40.	$ 350.00	$ 14000.00	1.10	$ 15435.00	$ 315388.32
SECR STENO	200.	$ 150.00	$ 30000.00	1.10	$ 33075.00	$ 422431.81
FOOD SVC	35.	$ 100.00	$ 3500.00	1.04	$ 3641.40	$ 142820.65
NURSE AIDE	53.	$ 200.00	$ 10600.00	1.21	$ 12826.00	$ 457093.93
GEN MERCH	56.	$ 200.00	$ 11200.00	1.49	$ 16670.00	$ 279012.56

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TAB EIGHT

PLANNING YEAR 3

PROGRAM	NUMBER OF TRAINING STATIONS	ESTIMATED PER-STATION CONSUMABLES	TOTAL ESTIMATED CONSUMABLES	INFLATION FACTOR	TOTAL PROJECTED CONSUMABLES COST	TOTAL PROJECTED OVERALL COST
SMALL ENG	28.	$ 200.00	$ 4000.00	1.16	$ 4630.50	$ 123525.63
ELECTRONICS	32.	$ 150.00	$ 4800.00	1.16	$ 5556.60	$ 223133.06
WELDING	23.	$ 75.00	$ 1725.00	1.16	$ 1996.90	$ 120025.39
AUTO BODY	23.	$ 300.00	$ 6700.00	1.37	$ 11538.39	$ 235130.11
CLERK STENO	200.	$ 350.00	$ 14000.00	1.16	$ 16206.75	$ 338529.05
FOOD SVC	40.	$ 150.00	$ 30000.00	1.16	$ 34728.75	$ 450998.65
NURSE AIDE	35.	$ 100.00	$ 3500.00	1.06	$ 3714.23	$ 152485.24
GEN MERCH	56.	$ 200.00	$ 10600.00	1.33	$ 14104.60	$ 402657.10
			$ 11200.00	1.82	$ 20337.50	$ 304487.81

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TAB EIGHT

PLANNING YEAR 4

PROGRAM	NUMBER OF TRAINING STATIONS	ESTIMATED PER-STATION CONSUMABLES	TOTAL ESTIMATED CONSUMABLES	INFLATION FACTOR	TOTAL PROJECTED CONSUMABLES COST	TOTAL PROJECTED OVERALL COST
SMALL ENG	20.	$ 200.00	$ 4000.00	1.22	$ 4362.82	$ 127655.97
ELECTRONICS	32.	$ 150.00	$ 4800.00	1.22	$ 5234.43	$ 238513.29
CUSTODIAL	23.	$ 75.00	$ 1725.00	1.22	$ 2096.75	$ 126980.32
WELDING	29.	$ 300.00	$ 8700.00	1.52	$ 13207.21	$ 251888.35
AUTO BODY	40.	$ 350.00	$ 14000.00	1.22	$ 17017.09	$ 363416.52
CLERK STENO	200.	$ 150.00	$ 30000.00	1.22	$ 36465.19	$ 474774.63
FOOD MGT	35.	$ 100.00	$ 3500.00	1.08	$ 3780.51	$ 162832.43
NURSE AIDE	53.	$ 200.00	$ 10600.00	1.46	$ 15519.46	$ 519046.71
DEV MERCH	56.	$ 200.00	$ 11200.00	2.22	$ 24811.75	$ 331548.16

TAB EIGHT

PLANNING YEAR 5

PROGRAM	NUMBER OF TRAINING STATIONS	ESTIMATED PER-STATION CONSUMABLES	TOTAL ESTIMATED CONSUMABLES	INFLATION FACTOR	TOTAL PROJECTED CONSUMABLES COST	TOTAL PROJECTED OVERALL COST
SHA ENG	20.	$ 200.00	$ 4000.00	1.28	$ 5105.13	$ 170990.85
ELECTRONICS	32.	$ 150.00	$ 4800.00	1.28	$ 6126.15	$ 255023.45
CUSTODIALK	23.	$ 75.00	$ 1725.00	1.28	$ 2201.59	$ 134305.17
WELDING	29.	$ 300.00	$ 8700.00	1.69	$ 14660.01	$ 269872.01
AUTO BODY	40.	$ 350.00	$ 14000.00	1.28	$ 17867.94	$ 390185.24
SECRL STENO	200.	$ 150.00	$ 30000.00	1.28	$ 39288.45	$ 485166.85
FOOD SVC	35.	$ 100.00	$ 3500.00	1.10	$ 3864.28	$ 173921.49
NURSE AIDE	53.	$ 200.00	$ 10600.00	1.61	$ 17071.41	$ 450368.38
GEN MERCH	56.	$ 200.00	$ 11200.00	2.70	$ 30270.33	$ 355124.68

APPENDIX

APPENDIX A

It was assumed in Tab Three that projected labor market demand data by vocational education program was readily available. However, most econometric employment projection models forecast by industrial groupings instead of by vocational education programs. The following computer exercise provides the necessary methodology for transforming employment projection models by industry into more useful forecasts for vocational education planners.

One advanced econometric model developed by Dr. Malcolm Cohen of the Institute of Labor and Industrial Relations at the University of Michigan is currently being used to project employment five years into the future for nineteen labor market zones in the state of Michigan.

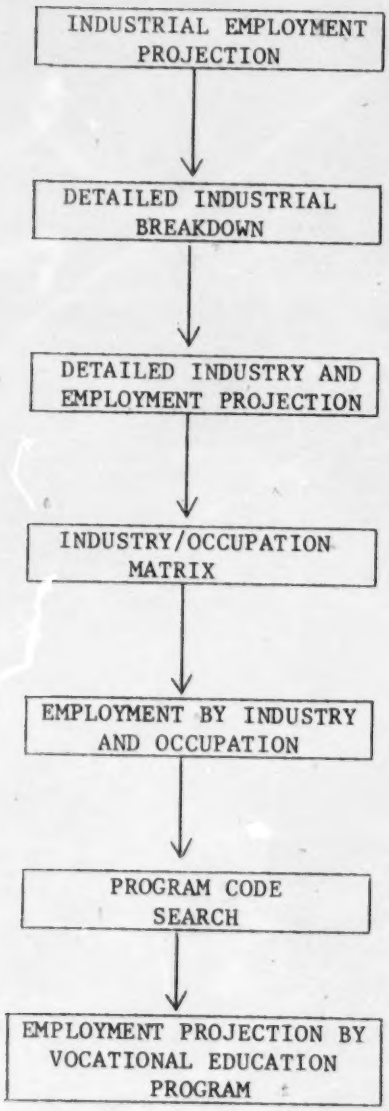
This computer program would take the Cohen model forecasts and from these derive a single-column Detailed Industrial Employment Matrix representing total projected employment by industry. This matrix would then be composed with the Industry-Occupation Matrix (IOM), which lists percentages of total employment by industry (rows) and occupation (columns). This matrix multiplication would yield another matrix detailing Projected Employment Totals by Industry and Occupation (EIOM).

The computer would proceed, through a pre-programmed method,* to scan the EIOM and sum up the cells that are relevant to a particular

---

*Federal agencies recently set up a conversion table that matches Department of Labor, Bureau of Census code, and the Dictionary of Occupational Titles with vocational education program titles. This table is presently being updated by the Office of Management and Budget. This computer program would base its pre-programmed matrix search on such a conversion table.

vocational program. This summation would represent an Employment Projection by Vocational Education Program. As an example, for Small Engine Repair cells (1,2), (5,1), (7,2), and (10,1) are the entries in the EVOM where employment opportunities exist. Their sum, 708.16, would be the aggregate employment projection for that particular program.


INDUSTRIAL EMPLOYMENT PROJECTION
DETAILED INDUSTRIAL BREAKDOWN
DETAILED INDUSTRY AND EMPLOYMENT PROJECTION
INDUSTRY/OCCUPATION MATRIX
EMPLOYMENT BY INDUSTRY AND OCCUPATION
PROGRAM CODE SEARCH
EMPLOYMENT PROJECTION BY VOCATIONAL EDUCATION PROGRAM

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